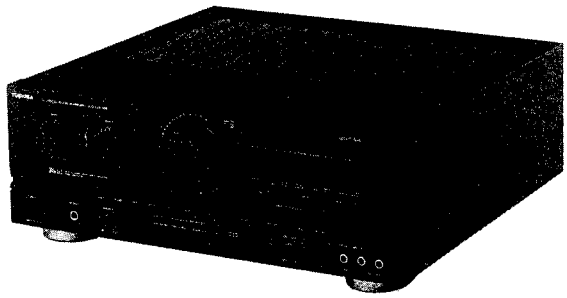
SERVICE DATA
FILE NO. 170 - 316

TOSHIBA

INTEGRATED DIGITAL AV AMPLIFIER

XB-1000



SPECIFICATIONS

■ Amplifier Stage

Total output:	Front: 50 W + 50 W Rear: 50 W + 50 W (4 channels driven at 8 ohms)
Total output: **(BTL Operation)**	BTL: 120 W + 120 W (2 channels driven at 8 ohms)
SN ratio:	100 dB
Total harmonic: **distortion:**	0.009% max. (1 kHz, 1 channel driven at 8 ohms, 50 W)
Frequency response	7 Hz to 70 kHz
Speaker impedance:	6 ohms to 16 ohms (8 ohms to 16 ohms at BTL)
BASS/TREBLE	± 10 dB (100 Hz/10 kHz)
Muting:	— 86 dB min.

■ Selector Stage

Input sensitivity:	Audio: 250 mV (47 kohms) Video: 1 Vp-p (75 ohms)
Video output:	1 Vp-p ± 0.1 V (75 ohms terminated)
Digital input/output:	Conformity to standard EIAJ format
Recording output:	250 mV (1 kohms) at 250 mV input
Y-C separation:	Y signal input: 1 Vp-p/75 ohms (USA.Canada)
input	C signal input: 0.286 Vp-p/75 ohms (USA.Canada)

■ DSP Stage

Fixed modes:	Concert hall, Cathedral, Night club, Rock concert, Stadium, Space fantasy, Theater, Dolby Surround
User's program:	Channel 1 thru channel 4
Variable parameters:	① Delay time (1 to 99 msec (independent L/R in 1 msec steps) (15 to 30 msec in 1 msec steps in Dolby surround) ② Reverb time ③ Hall size (5 sizes) ④ Filters: Low-pass filter, High-pass filter
Quantized bits:	16 bits

■ Power Supply etc.

Power supply:	AC 120V ∿, 60 Hz (U.S.A., Canada) AC 220V ∿, 50 Hz (Europe, Swiss) AC 240V ∿, 50 Hz (UK)
Power consumption:	4.5 A (U.S.A./Canada) 300W (Europe, Swiss) 670 W (UK)
Power outlets:	2 coupled (total 100 W max.) (U.S.A., Canada) 1 uncoupled (200 W max.) (U.S.A., Canada)
Major dimensions:	430 x 156 x 436 (W/H/D)
Weight:	12.5 kg approx.

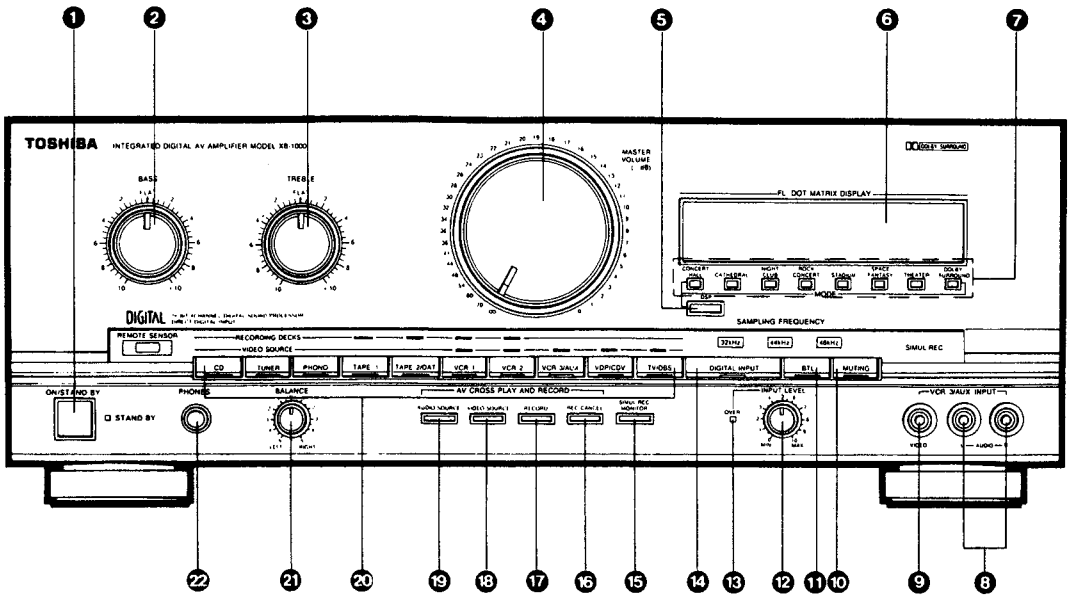
Specifications are subject to change without notice.

TA, TC, TE, TU, TS

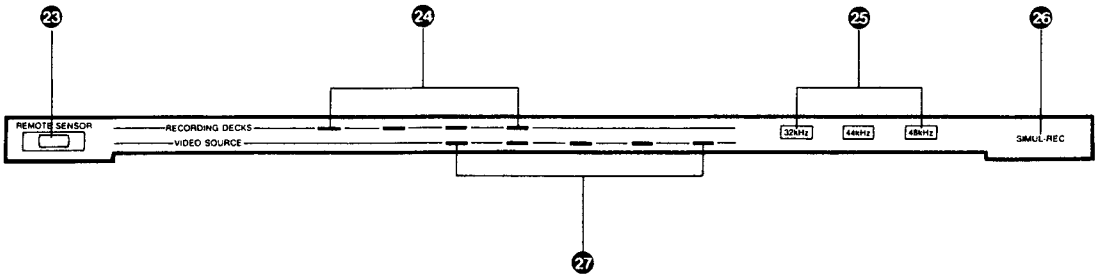
22905875 Oct., 1988 Ⓢ

OPERATING CONTROLS

■ Front Panel Section (USA.CANADA MODEL)



■ Indicator Section



Precautions

- Be sure to provide adequate ventilation for the unit on all sides, particularly when it is placed in an audio rack. If ventilation is blocked, the unit may overheat and not operate properly. Also, be sure to use the unit in a horizontal position. Never place the unit on its side or on a slanted surface since this could result in a malfunction.
- If the unit is placed near a TV or other tuner, it may cause reception inteference resulting in some noise in the TV tuner output. In this case, place the TV or other tuner in a far distance from this unit.

❶ ON/STAND BY switch and STAND BY indicator
Press to switch ON, and press a second time to switch to STAND BY mode. The STAND BY indicator comes on at the STAND BY mode. While this indicator is on, this unit can be switched ON by the ON/STAND BY switch on the front panel or the remote control unit. This indicator flashes when receiving signals from the remote control unit and this unit operates.

Note:

STAND BY mode: This unit remains connected to mains supply at STAND BY mode. Disconnect the power cord when the unit is not going to be used for a long time.

❷ BASS control
Turn this control clockwise to increase the low frequency and counter clockwise to decrease it.

❸ TREBLE control
Turn this control clockwise to increase the high frequency and counter clockwise to decrease it.

❹ MASTER VOLUME control
Turn this control clockwise to increase the master volume level and counter clockwise to decrease it.

❺ DSP key and indicator
The indicator comes on and DSP effect is applied to the playback sound when the DSP key is pressed. Normal playback is restored when the key is pressed a second time. Note that DSP is not applied if DSP or digital input is being used during simulrecording.

❻ Fluorescent Tube Indicator Panel
This large microcontroller display panel simplifies operations by easy-to-follow interactive procedures.

❼ MODE key
Press to select the desired sound field among eight preset sound field modes.

❽ VCR 3/AUX audio input terminal

❾ VCR 3/AUX video input terminal

❿ MUTING key and indicator
Indicator comes on and volume is lowered when the MUTING key is pressed. Volume is returned to former level when pressed a second time.

⓫ BTL key and indicator
Press this key to activate the BTL circuit that switches from a 4-channel circuit to a 2-channel circuit. At this time, this unit enters the high power output of the 2-channel amplifier and sound is output only through the speakers connected to the FRONT terminals. Press this key a second time to return to the 4-channel circuit.

⓬ INPUT LEVEL control
When using the DSP function, adjust this control to a position where the OVER indicator flashes on and off a few times. If the input level is too low, the digital sound processor will not be effective, resulting in unwanted noise.

⓭ OVER indicator

⓮ DIGITAL INPUT key
Press this key during playback of input signal from DBS tuner, CD player, or DAT deck. The indicator comes on to indicate that the input is a digital signal. Press a second time to return to analog signal. This key has no effect when in Dolby Surround mode, or when a DSP or digital input is applied during simulrecording.

⓯ SIMUL-REC MONITOR key
Playback is switched alternately to "System A" and "System B" each time this key is pressed. The indicators are also switched accordingly.

⓰ REC. CANCEL key
After pressing this key, press the RECORD key ⓱ to release the audio/video recording system connections.

⓱ RECORD key
Press to select recording deck at Audio and Video Recording (see page 8).

⓲ VIDEO SOURCE key
Press to select video source at Independent Playback of Audio and Video.

⓳ AUDIO SOURCE key
Press to select audio source at Independent Playback of Audio and Video.

⓴ Selector keys and indicators
Select input source and audio/video recording deck.

㉑ BALANCE control
Use to control the left and right balance of the front speaker volume levels. The right speaker level is increased by turning clockwise, and the left speaker level is increased by turning counter clockwise.

㉒ PHONES Jack
Connect the headphones plug to this jack to use a pair of headphones. Note that speakers are switched off when using headphones.

㉓ REMOTE SENSOR Window

㉔ RECORDING DECKS indicators
Indicates audio/video recording deck being used.

㉕ SAMPLING FREQUENCY indicators

32kHz . . . Comes on when in DBS tuner A mode or long DAT mode.

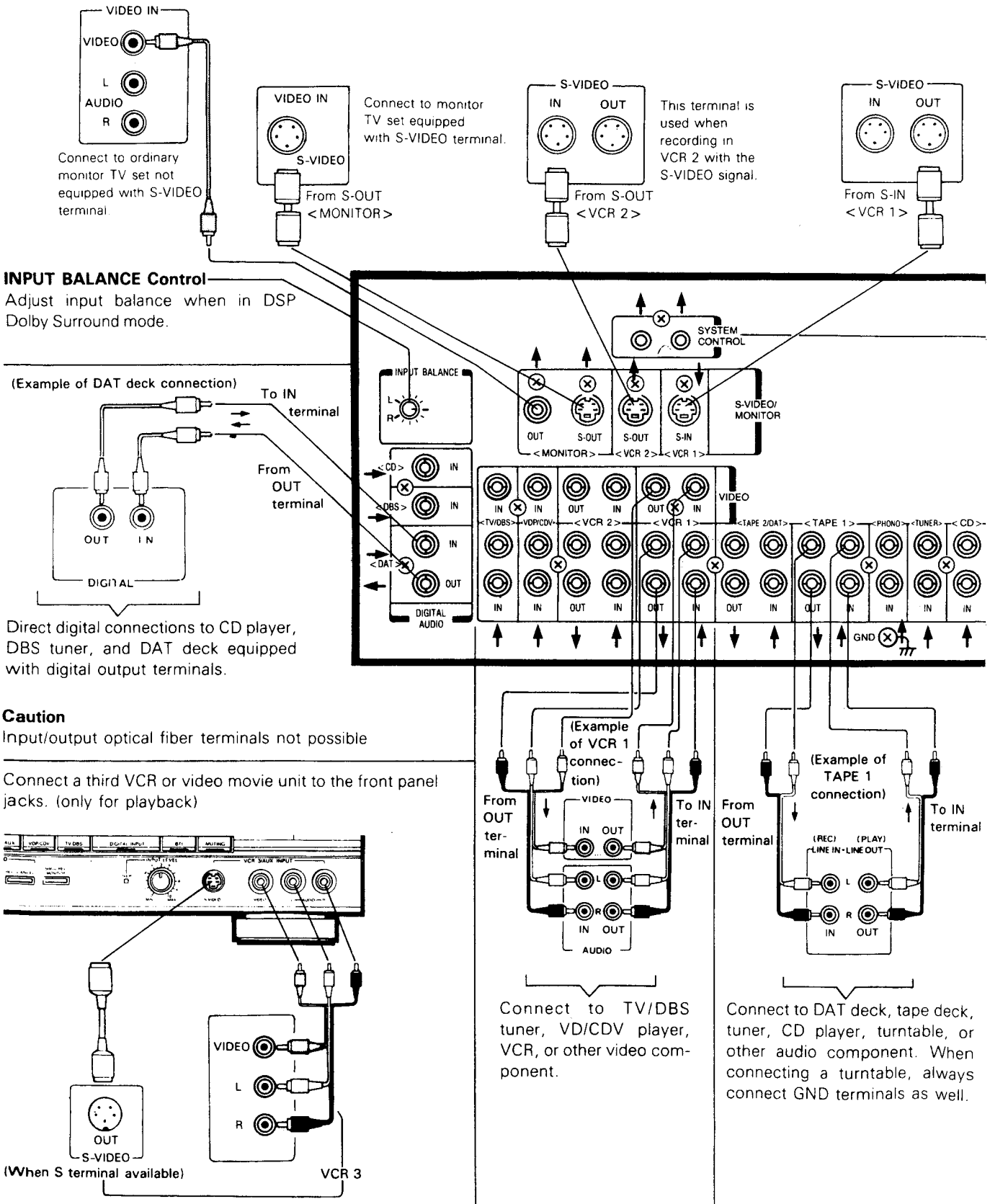
44kHz . . . Comes on when using a CD player, or when playing a DAT music tape.

48kHz . . . Comes on when in DBS tuner B mode or standard DAT mode.

㉖ SIMUL-REC indicator
Comes on when recording in simulrecording mode.

㉗ VIDEO SOURCE indicators
Indicates video source.

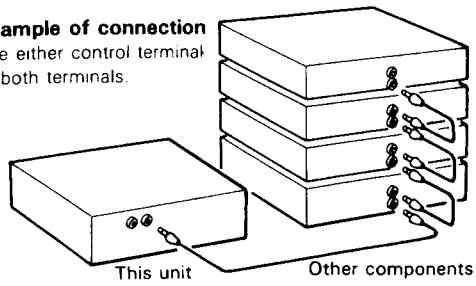
CAUTION: Leave all power switches off and all power cords unplugged until all audio/video connections have been completed.



■ SYSTEM CONTROL

If dedicated mini-plugs connect this unit to optional TOSHIBA's components, such as tuner (ST-5528/5538), tape deck (PC-5858), CD player (XR-9018/9028), CD auto changer (XR-9058), and turntable (SR-5638), the whole system can be controlled by the provided remote control unit. (See the section on using the remote control unit for details.)

Example of connection
Use either control terminal or both terminals.



This terminal is used for playback in VCR 1 using the S-VIDEO signal.

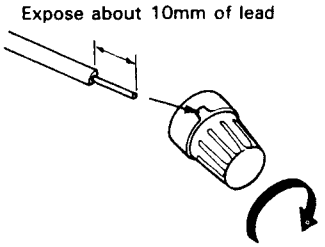
■ BTL connection

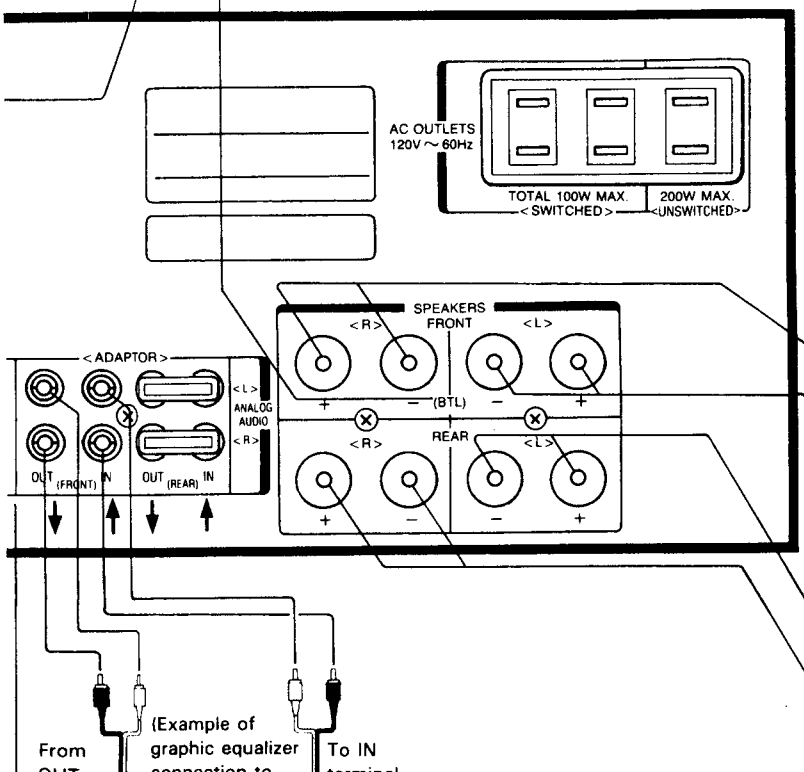
Speakers connected to the FRONT terminals can be driven by the high power output of the 2-channel amplifier.

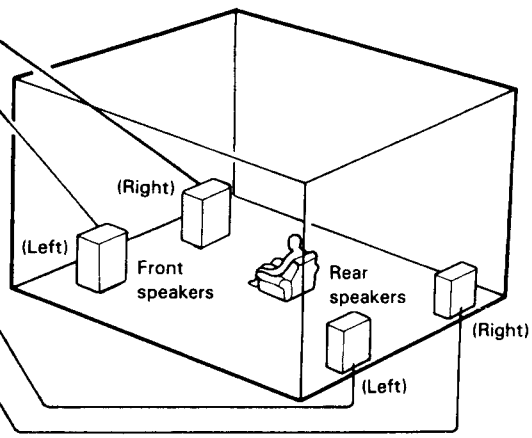
■ Speaker positions and connections

Ensure that speaker polarity is matched with amplifier polarity by connecting plus (+) speaker cables to red speaker terminals, and minus (−) speaker cables to black speaker terminals. Use speakers with impedance in the 6 to 16 ohms range.

Twist the lead wires firmly together, insert into the speaker terminal aperture, and then tighten firmly by turning clockwise.



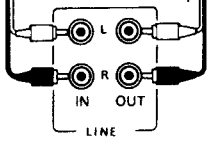




From OUT terminal

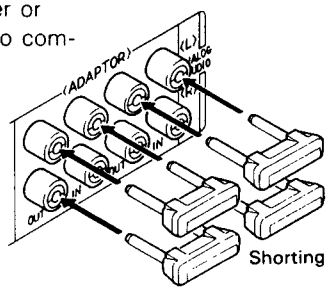
(Example of graphic equalizer connection to FRONT)

To IN terminal



Connect to graphic equalizer or other audio component.

Signals to which DSP effect is applied for FRONT and REAR are output from the <ADAPTOR> OUT terminals (DSP is not effective when it is switched off). According to preference, connect these terminals to those of a graphic equalizer to obtain various tones or to those of a power amplifier using this unit as a preamplifier.



■ Speaker positions

Since this unit is a 4-channel amplifier designed to drive independent front and rear speakers, position the speakers as indicated in the illustration upon to get the most effective results with natural soundfield playback. Although good results can be obtained even when small mini speakers are used as the rear speakers, adjust the rear speaker volume etc to match the acoustic conditions of the listening room.

Caution

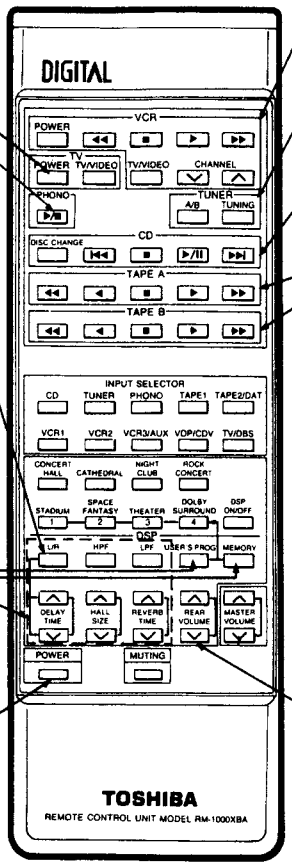
Remove the shorting pins from the <ADAPTOR> terminals only when using those terminals. But do not plug these pins into any other terminal under any circumstances (since this can result in failure). If not using the <ADAPTOR> terminals, make sure that the shorting pins are plugged in as shown in the diagram. Incorrect insertion may prevent output of sound.

Note:

Keys not specifically described here are the same as on this unit's front panel. Since some optional components to be connected for system control are not available in some areas, check their availability at the authorized TOSHIBA service station in your area.

Note that by pointing this remote control unit at each REMOTE SENSOR window TVs and VCRs can be controlled without connection to SYSTEM CONTROL

- These buttons switch POWER on/off and TV/VIDEO operation for optional TOSHIBA's TVs.
- This button operates SR-5638 turntable.
- **L/R Key**
  Although delay time is normally changed simultaneously in both left and right channels, "both channels", "left only", or "right only" can be set one after another by pressing the L/R key.
- **USER'S PROGRAM Key**
  User's program call key. After first press this key, press one of the keys 1 thru 4 in the row above to call a program.
- **MEMORY Key**
  To store a user's program in memory, press this key, then one of the keys 1 thru 4 in the row above.
- **DSP CONTROL Keys**
  These keys are used to change parameters in each mode when using the digital sound processor. And by storing changed parameters in memory, the user's own unique sound field can be created.
- **POWER**
  Switch this unit power on and off (same as the front panel POWER switch).



- These buttons operate optional TOSHIBA's VCRs. Their operation is the same as for the VCR's front panel.
- This button selects bands of optional tuner (ST-5528/5538). A/B and TUNING are the same as on the tuner's front panel.
- These buttons operate optional CD player (XR-9018/9028) and CD auto changer (XR-9058). DISC CHANGE button is used to select XR-9058's discs in sequence.
- These buttons operate optional tape deck (PC-5858) and are the same as on the PC-5858's front panel.

■ Changing Parameters

① Press the MODE key to set DSP mode.
② Change parameter by pressing the DSP CONTROL keys.

To store in memory

③ Press the MEMORY key.
④ Press one of the keys 1 thru 4.

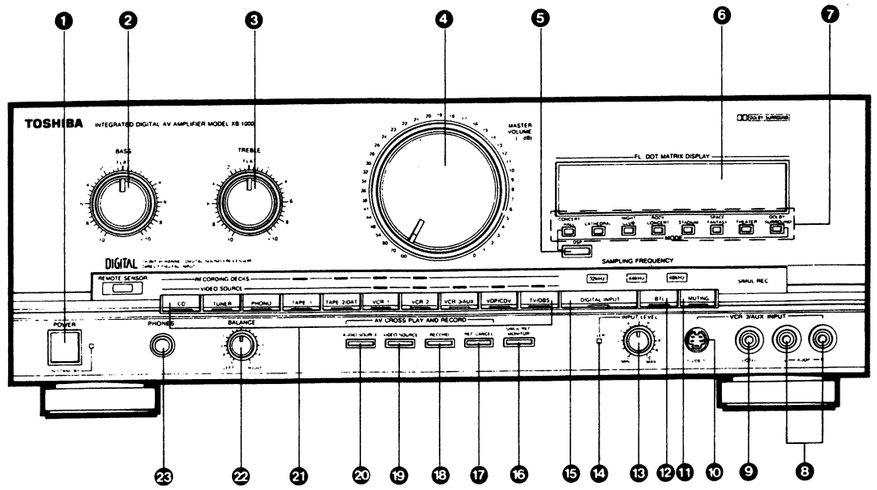
This completes the memory storage operation.

To call parameter from memory

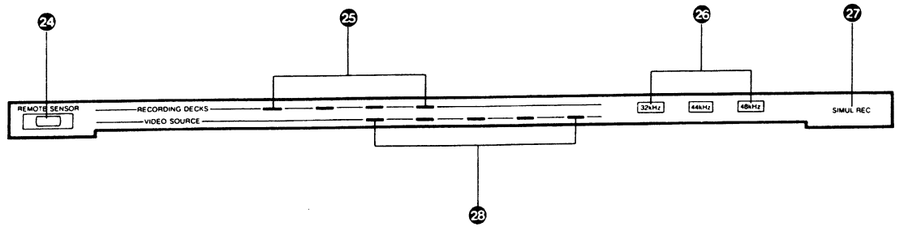
- Press the USER'S PROGRAM key.
- Press one of the keys 1 thru 4.

- **REAR VOLUME**
  Press [Λ] to increase the volume level of the rear speakers, and press [V] to decrease the level.

■ Front Panel Section (Europe, UK, Swiss Model)



■ Indicator Section



Precautions

- Be sure to provide adequate ventilation for the unit on all sides, particularly when it is placed in an audio rack. If ventilation is blocked, the unit may overheat and not operate properly. Also, be sure to use the unit in a horizontal position. Never place the unit on its side or on a slanted surface since this could result in a malfunction.
- If the unit is placed near a TV or other tuner, it may cause reception inteference resulting in some noise in the TV tuner output. In this case, place the TV or other tuner in a far distance from this unit.

❶ POWER switch and STAND BY indicator
Press to switch power on, and press a second time to switch power off. The STAND BY indicator comes on when the power is switched off. While this indicator is on, the power can be switched on by the POWER switch on this amplifier or the remote control unit. This indicator flashes when receiving signals from the remote control unit and the amplifier operates.
Note:
STAND BY mode: This unit remains connected to mains supply at STAND BY mode. Disconnect the power cord when the unit is not going to be used for a long time.

❷ BASS control
Turn this control clockwise to increase the low frequency and counter clockwise to decrease it.

❸ TREBLE control
Turn this control clockwise to increase the high frequency and counter clockwise to decrease it.

❹ MASTER VOLUME control
Turn this control clockwise to increase the master volume level and counter clockwise to decrease it.

❺ DSP key and indicator
The indicator comes on and DSP effect is applied to the playback sound when the DSP key is pressed. Normal playback is restored when the key is pressed a second time. Note that DSP is not applied if DSP or digital input is being used during simulrecording.

❻ Fluorescent Tube Indicator Panel
This large microcontroller display panel simplifies operations by easy-to-follow interactive procedures.

❼ MODE key
Press to select the desired sound field among eight preset sound field modes.

❽ VCR 3/AUX audio input terminal

❾ VCR 3/AUX video input terminal

❿ VCR 3/AUX S-video input terminal

⓫ MUTING key and indicator
Indicator comes on and volume is lowered when the MUTING key is pressed. Volume is returned to former level when pressed a second time.

⓬ BTL key and indicator
Press this key to activate the BTL circuit that switches from a 4-channel circuit to a 2-channel circuit. At this time, this unit enters the high power output of the 2-channel amplifier and sound is output only through the speakers connected to the FRONT terminals. Press this key a second time to return to the 4-channel circuit.

⓭ INPUT LEVEL control
When using the DSP function, adjust this control to a position where the OVER indicator flashes on and off a few times. If the input level is too low, the digital sound processor will not be effective, resulting in unwanted noise.

⓮ OVER indicator

⓯ DIGITAL INPUT key
Press this key during playback of input signal from DBS tuner, CD player, or DAT deck. The indicator comes on to indicate that the input is a digital signal. Press a second time to return to analog signal. This key has no effect when in Dolby Surround mode, or when a DSP or digital input is applied during simulrecording.

⓰ SIMUL-REC MONITOR key
Playback is switched alternately to "System A" and "System B" each time this key is pressed. The indicators are also switched accordingly.

⓱ REC. CANCEL key
After pressing this key, press the RECORD key ⓲ to release the audio/video recording system connections.

⓲ RECORD key
Press to select recording deck at Audio and Video Recording.

⓳ VIDEO SOURCE key
Press to select video source at Independent Playback of Audio and Video.

⓴ AUDIO SOURCE key
Press to select audio source at Independent Playback of Audio and Video.

㉑ Selector keys and indicators
Select input source and audio/video recording deck

㉒ BALANCE control
Use to control the left and right balance of the front speaker volume levels. The right speaker level is increased by turning clockwise, and the left speaker level is increased by turning counter clockwise.

㉓ PHONES Jack
Connect the headphones plug to this jack to use a pair of headphones. Note that speakers are switched off when using headphones.

㉔ REMOTE SENSOR Window

㉕ RECORDING DECKS indicators
Indicates audio/video recording deck being used.

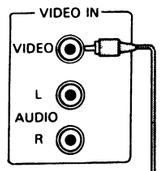
㉖ SAMPLING FREQUENCY indicators
32kHz . . . Comes on when in DBS tuner A mode or ong DAT mode.
44kHz . . . Comes on when using a CD player, or when playing a DAT music tape.
48kHz . . . Comes on when in DBS tuner B mode or standard DAT mode.

㉗ SIMUL-REC indicator
Comes on when recording in simulrecording mode.

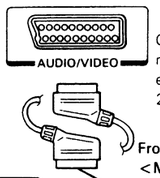
㉘ VIDEO SOURCE indicators
Indicates video source.

CAUTION: Leave all power switches off and all power cords unplugged until all audio/video connections have been completed.

Notes:
1. Only video signals are handled by 21P terminals. For audio signals, use IN/OUT at <ANALOG AUDIO> terminals.
2. If video signals output from this set are monitored using both pin jack and 21P terminals at the same time, the pictures may result in poor quality. Therefore, use either terminal at one time.
3. If signals via pin jack terminals cannot be monitored using 21P terminals, monitor using pin jack terminals or set the TV/VCR switch to VCR position on the VCRs connected via 21P terminals

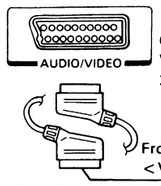


Connect to monitor TV set equipped with pin jack terminal.



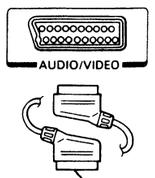
Connect to monitor TV set equipped with 21P terminal

From <MONITOR>



Connect to VCR 2 with 21P terminal

From <VCR 2>

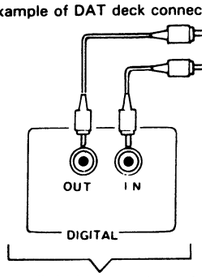


Connect to VCR 1 with 21P terminal

From <VCR 1>

INPUT BALANCE Control
Adjust input balance when in DSP Dolby Surround mode.

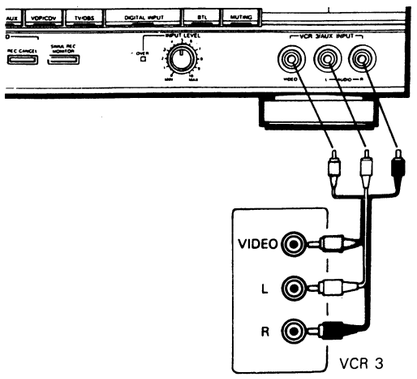
(Example of DAT deck connection)

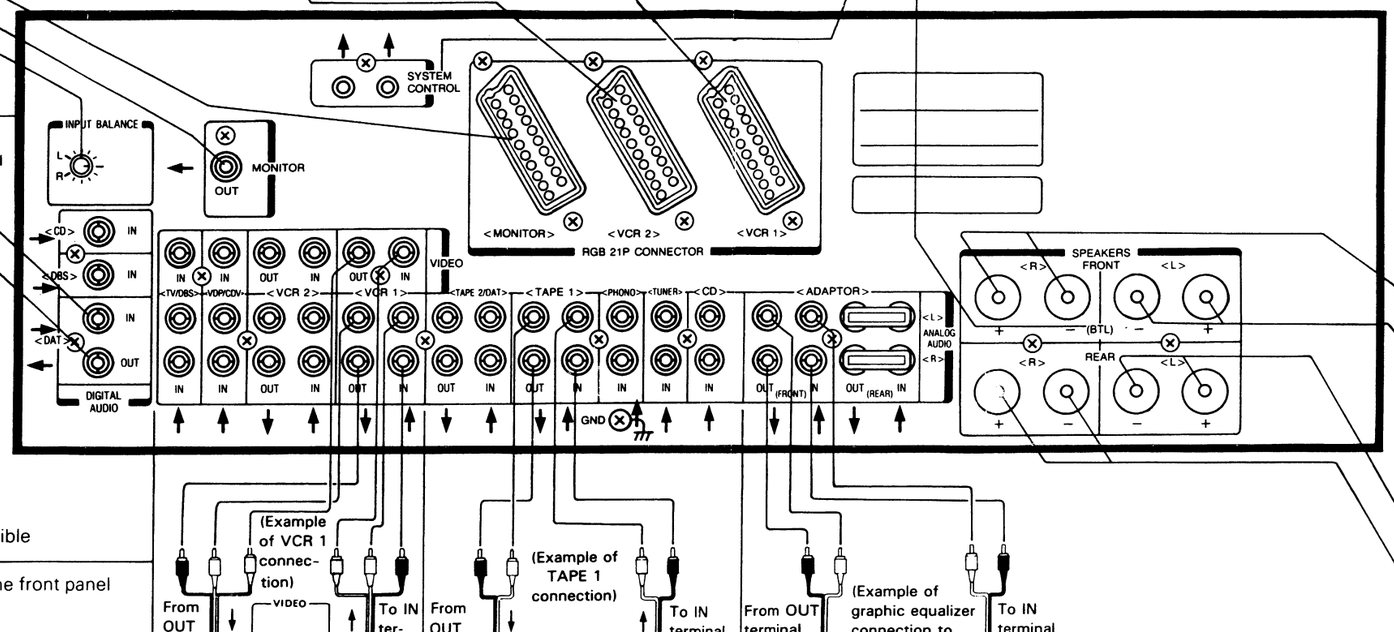


Direct digital connections to CD player, DBS tuner, and DAT deck equipped with digital output terminals.

Caution
Input/output optical fiber terminals not possible

Connect a third VCR or video movie unit to the front panel jacks. (only for playback)

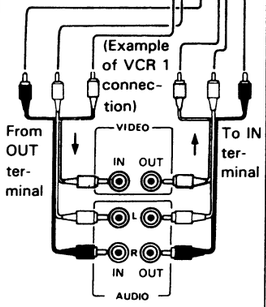




(Example of VCR 1 connection)

From OUT terminal

To IN terminal

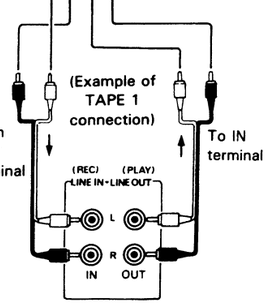


Connect to TV/DBS tuner, VD/CDV palyer, VCR, or other video component.

(Example of TAPE 1 connection)

From OUT terminal

To IN terminal

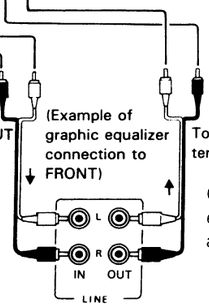


Connect to DAT deck, tape deck, tuner, CD player, turntable, or other audio component. When connecting a turntable, always connect GND terminals as well.

(Example of graphic equalizer connection to FRONT)

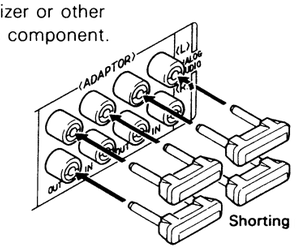
From OUT terminal

To IN terminal



Signals to which DSP effect is applied for FRONT and REAR are output from the <ADAPTOR> OUT terminals (DSP is not effective when it is switched off). According to preference, connect these terminals to those of a graphic equalizer to obtain various tones or to those of a power amplifier using this unit as a preamplifier.

Connect to graphic equalizer or other audio component.



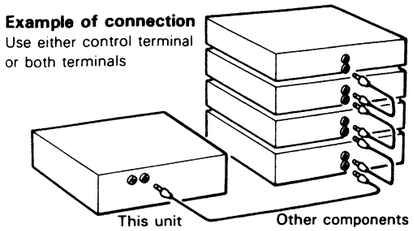
Shorting pin

Caution
Remove the shorting pins from the <ADAPTOR> terminals only when using those terminals. But do not plug these pins into any other terminal under any circumstance (since this can result in failure). If not using the <ADAPTOR> terminals, make sure that the shorting pins are plugged in as shown in the diagram. Incorrect insertion may prevent output of sound.

■ SYSTEM CONTROL

If dedicated mini-plugs connect this unit to optional TOSHIBA's components, such as tuner (ST-5528/5538), tape deck (PC-5858), and turntable (SR-5638), the whole system can be controlled by the provided remote control unit. (See the section on using the remote control unit for details.)

Example of connection
Use either control terminal or both terminals



■ BTL connection

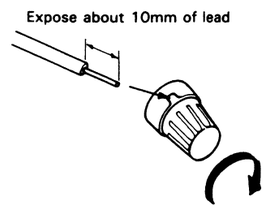
Speakers connected to the FRONT terminals can be driven by the high power output of the 2-channel amplifier.

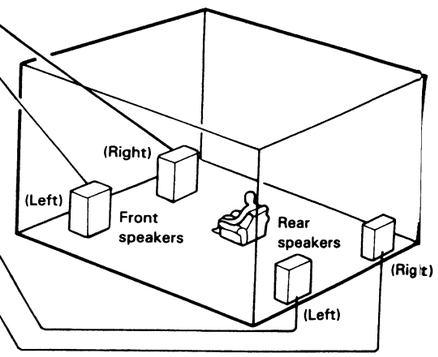
■ Speaker positions and connections

Ensure that speaker polarity is matched with amplifier polarity by connecting plus (+) speaker cables to red speaker terminals, and minus (−) speaker cables to black speaker terminals. Use speakers with impedance in the 6 to 16 ohms range.

Twist the lead wires firmly together, insert into the speaker terminal aperture, and then tighten firmly by turning clockwise.

Expose about 10mm of lead





■ Speaker positions

Since this unit is a 4-channel amplifier designed to drive independent front and rear speakers, position the speakers as indicated in the illustration upon to get the most effective results with natural soundfield playback. Although good results can be obtained even when small mini speakers are used as the rear speakers, adjust the rear speaker volume etc to match the acoustic conditions of the listening room.

USE/LEARN switch

USE: Set to this position for normal use.

LEARN: Set to this position when this unit is to learn signals of your remote control units. After learning, reset to USE.

TRANSMIT mode switch

Each time this switch is switched among AUDIO, AUX, and VIDEO modes, the PROGRAMMABLE keys can learn or transmit signals in the selected mode.

Part of PROGRAMMABLE keys

- Any 34 keys framed by the gray line can learn signals from your remote control units in each position of the TRANSMIT mode switch.
- See the next page for learning.

TRANSMIT indicator

Lights when transmitting remote control signals.

LEARN indicator

- Lights while learning is possible.
- Goes on and off when learning is impossible.

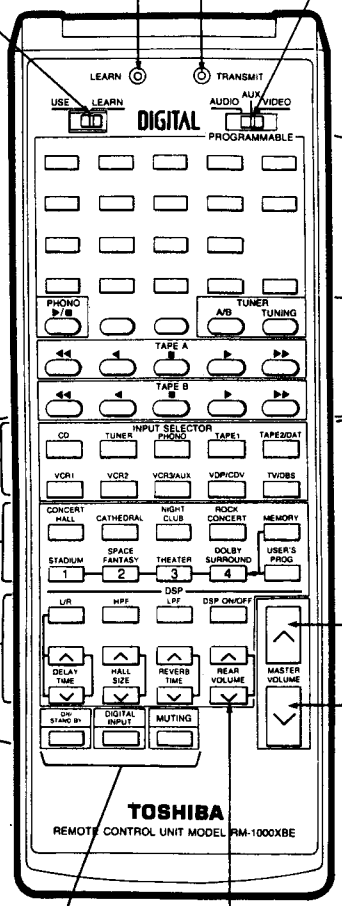
PROGRAMMABLE PRESET keys

- These 13 keys (under the names of PHONO, TUNER, TAPE A, and TAPE B) are available for learning; however, they are preset with the following functions at the factory.
- When TOSHIBA's optional components, such as turntable (SR-5638), tuner (ST-5528/5538), and tape deck (PC-5858), are connected to this unit at <SYSTEM CONTROL>, these components can be operated in any position of the TRANSMIT mode switch.
- The learning method is the same as for PROGRAMMABLE keys.
- To initialize keys which have learned signals, press the Reset button in the battery compartment. **Note that in this case all the memory except that of the preset keys is erased.**
- After initialization, these keys operate for the above components. For the tuner TUNING key, it selects preset bands in sequence. For details, refer to each component's owner's manual.

Note:
Since some optional components to be connected for system control are not available in some areas, check their availability at the authorized TOSHIBA service station in your area.

Part of preset keys

- See page 8 for this explanation.



INPUT SELECTOR

Functions the same way as key ⑳ on the front panel.

MODE key

Functions the same way as key ❼ on the front panel.

MEMORY key

To store a user's program in memory, press this key, then one of the keys 1 thru 4 in the row below.

USER'S PROG. (PROGRAM) key

User's program call key. After first press this key, press one of the keys 1 thru 4 to call a program.

MASTER VOLUME keys

These keys operate the MASTER VOLUME control on the front panel. Press [∧] to increase volume and [∨] to decrease it.

DSP ON/OFF key

Functions the same way as key ❺ on the front panel.

ON/STAND BY

Functions the same way as key ❶ on the front panel.

DIGITAL INPUT

Functions the same way as key ⑭ on the front panel.

MUTING

Functions the same way as key ⑩ on the front panel.

DSP CONTROL keys

These keys are used to change parameters in each mode when using the digital sound processor. And by storing changed parameters in memory, the user's own unique sound field can be created. See the next page for details.

REAR VOLUME key

Press [∧] to increase the volume level of the rear speakers, and press [∨] to decrease the level.

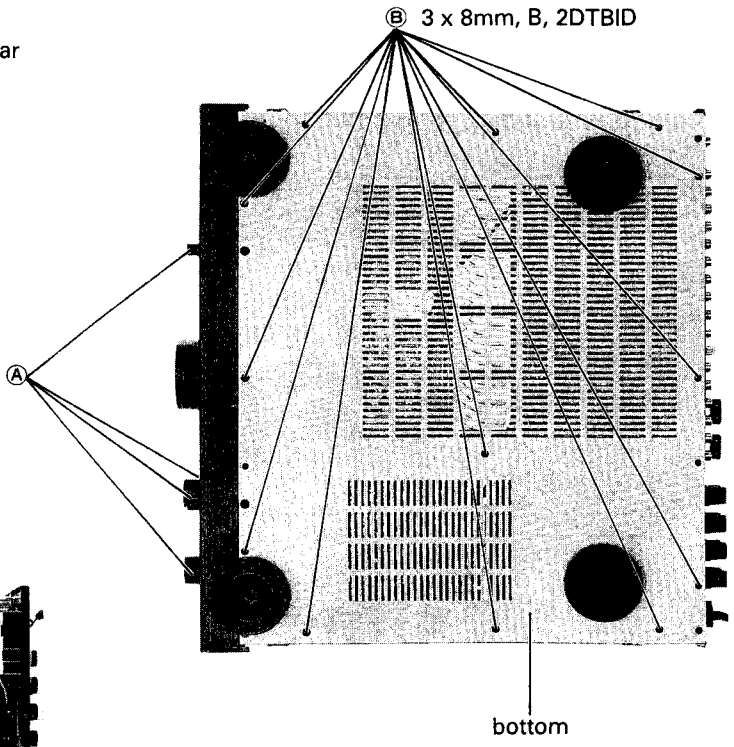
DISASSEMBLY INSTRUCTIONS

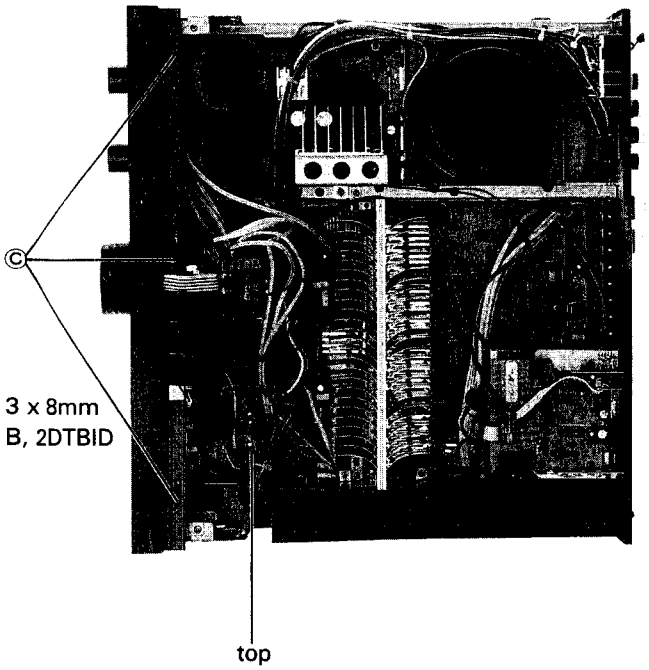
Removal of Top Cover

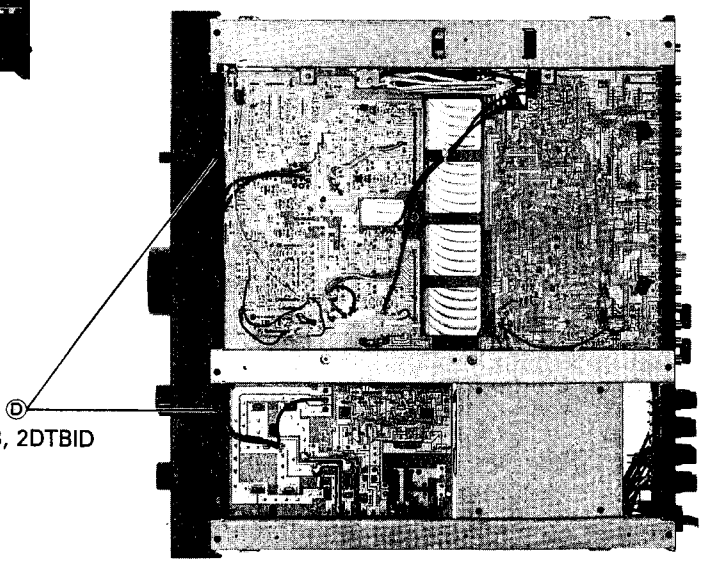
1. Remove 10 screws on the sides of top cover and rear panel.

Removal of Front Panel

1. Remove 4 the knob Ⓐ.
2. Remove 13 screws Ⓑ, and take off the bottom plate.
3. Remove 5 screws Ⓑ and Ⓒ removed.





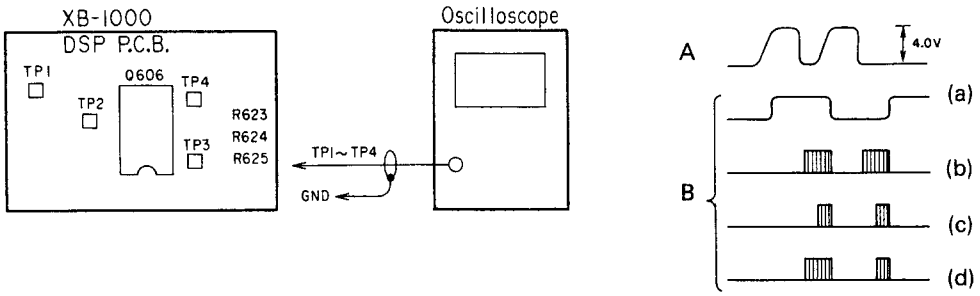


ADJUSTMENTS

The adjustment procedures for this IC using an oscilloscope are described below.

TD6704P (ANALOG/DIGITAL) ADJUSTMENT

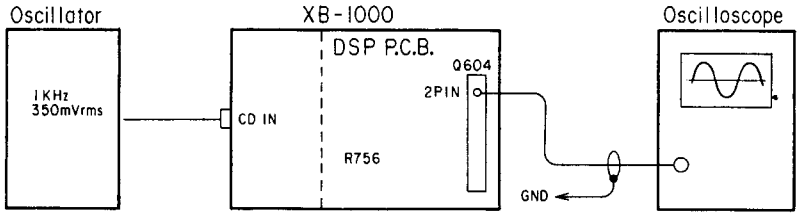
1. Make the input signal of the left and right channels 0 volt (in source pause or input open status), and rotate the semi-fixed potentiometers R623 (5k ohms) and R624 (5k ohms) to adjust the output voltage at the test points TP4 (Q606 Pin (7)) and TP3 (Q607 Pin (27)) for 4.0 volts. Refer to Figure A.
2. Apply trigger to the test point TP2 (Q607 Pin (7)) and observe the TP1 (Q607 Pin (10). The oscillator indicates as shown on the (a) and (b) of Figure B, rotate R625 so that the "H" levels become as small as possible (Figure B, (c)). If there is unbalance in the level between the right channel and left channel as shown figure B (d), slightly rotate R623 and R624 to balance the level between 2 channels and then repeat the above procedures.



LIGHT UP SENSITIVITY ADJUSTMENT

At the factory, the sensitivity of detector circuit is adjusted so that the LED starts to illuminate when the voltage becomes 500mV at the Dolby test point. The adjustment procedures used in the factory are as follows:

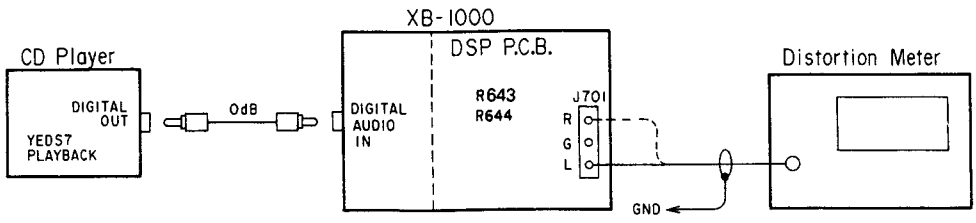
(1) Take out the DSP unit from the case. Pull out the plastic rivet holing the PC board and unfold the double-folded PC board.
(2) Feed sine wave of 1kHz 350mV from a signal generator to the CD analog input terminal (left or right only).
(3) Apply the power to XB-1000 and set to the CD analog input, Dolby surround DSP mode.
(4) Rotate the INPUT LEVEL potentiometer so that the signal level becomes 500mV rms at Dolby test point (Q604 Pin (2)).
(5) Rotate R765 (located beside the microprocessor) on the PC board so that the "OVER" LED just comes on.



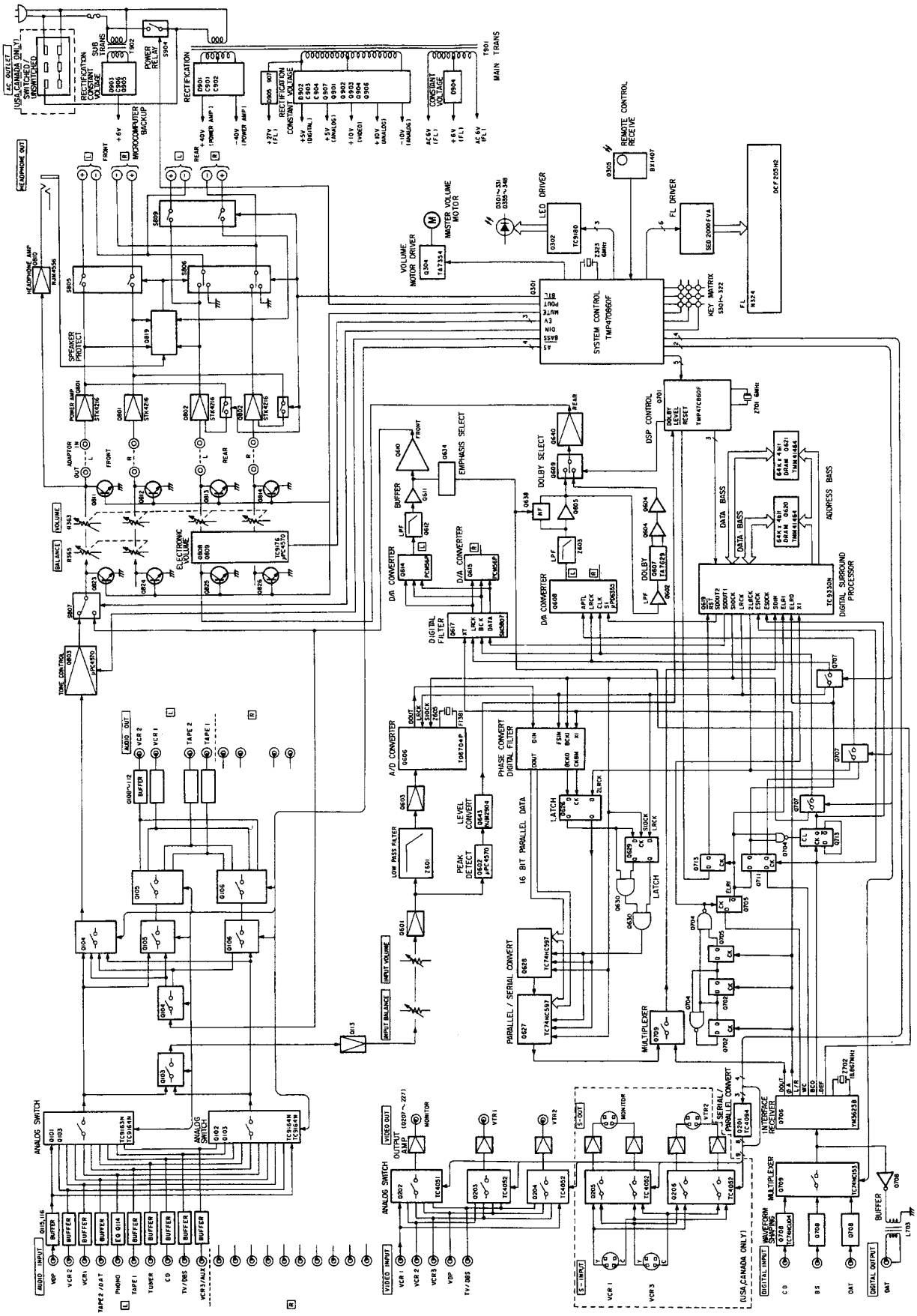
PCM56P (DIGITAL/ANALOG) ADJUSTMENT

The followings explain the adjustment procedures of D/A converter.

(1) Remove the DSP unit from the main unit's chassis. Pull out the plastic rivet holding the PC board and unfold thePC board. In this process, keep all the connection cables for input and output connected.
(2) Place the unit to the Digital In mode.
(3) Reproduce the test signal of 0dB (against full-scale), for example 1th track of YEDS7, by a CD player having the digital out feature and feed it to the this unit in digital signal.
(4) Adjust R643 and R644 so that the signal distortion rate for the left and right channels at the output terminal J701 of the DSP unit becomes minimum.



BLOCK DIAGRAM



VOLTAGE CHARTS

PC AMP

Q801

1	NC
2	Signal
3	-0.2V
4	-0.2V
5	0V
6	-38.0V
7	Signal
8	NC
9	-40.0V
10	0V
11	-40.0V
12	Signal
13	40.0V
14	38.0V
15	Signal
16	-40.0V
17	Signal
18	0V
19	-0.2V
20	-0.2V
21	Signal
22	NC

Q802

1	NC
2	1.2V
3	-0.2V
4	-0.2V
5	0V
6	-38.0V
7	-1.4V
8	NC
9	-40.0V
10	-40.0V
11	-40.0V
12	0V
13	40.0V
14	38.0V
15	0V
16	-40.0V
17	-1.4X
18	0V
19	-0.2V
20	-0.2V
21	1.2V
22	NC

Q808

1	-10.2V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0.03V
9	0.03V
10	0.03V
11	0.01V
12	0.01V
13	0V
14	0V
15	0V
16	9.8V

Q809

1	0.11V
2	0.11V
3	0.09V
4	-10.2V
5	0.09V
6	0.1V
7	0.1V
8	9.8V

Q810

1	9.74V
2	0V
3	0.01V
4	0.01V
5	-10.16V
6	0.01V
7	0.01V
8	0.01V
9	9.74V

Q819

1	3.72V
2	2.27V
3	0.83V
4	0V
5	0.98V
6	0V
7	0V
8	0.01V

Q820 REAR

1	0V
2	0.01V
3	0V
4	1.0V
5	0V
6	0.81V
7	2.2V
8	3.67V

Q804

E	4.3V
C	4.3V
B	3.7V

Q805

S	0.01V
C	0.46V
D	0.01V

Q806

S	0.01V
C	0.46V
D	0.01V

Q807

E	0V
C	4.93V
B	0.07V

Q811

E	0.01V
C	0.01V
B	-3.0V

Q812

E	0.01V
C	0.01V
B	-3.0V

Q813

E	0.01V
C	0.01V
B	-3.0V

Q814

E	0.01V
C	0.01V
B	-3.0V

Q815

E	0.01V
C	-0.3V
B	-0.01V

Q816

E	0.02V
C	-0.3V
B	0.02V

Q817

E	-0.01V
C	-0.3V
B	-0.01V

Q818

E	-0.03V
C	-0.25V
B	-0.03V

Q821

E	0V
C	0.8V
B	1.4V

Q822

E	0.12V
C	-3.0V
B	0V

Q823

E	0V
C	0.01V
B	-3.0V

Q824

E	0V
C	0.01V
B	-3.0V

Q825

E	0V
C	0.01V
B	-3.0V

Q826

E	0V
C	0V
B	-3.0V

Q901

1	7.98V
2	4.95V
3	0V

Q902

1	7.97V
2	5.01V
3	0V

Q903

1	17.5V
2	9.77V
3	0V

Q904

1	0V
2	-10.15V
3	-18.72V

Q905

1	9.47V
2	5.64V
3	0V

Q906

1	17.48V
2	9.86V
3	0V

Q907

E	8.0V
C	17.0V
B	8.6V

Q835

E	0V
C	10.0V
B	0V

Q836

E	0V
C	0V
B	0.6V

Q837

E	0V
C	0V
B	0V

PC-SELECT 3

Q207 (MONITOR OUT)

E	2.87V
C	9.89V
B	3.53V

Q208 (VTR 1 OUT)

E	2.87V
C	9.84V
B	3.52V

Q209 (VTR 2 OUT)

E	2.92V
C	9.84V
B	3.56V

Q210 (MONITOR S-OUT)

E	2.88V
C	9.84V
B	3.52V

Q211 (MONITOR S-OUT)

E	3.34V
C	9.83V
B	3.55V

Q212 (VTR 2 S-OUT)

E	2.87V
C	9.83V
B	3.52V

Q213 (VTR 2 S OUT)

E	2.89V
C	9.83V
B	3.53V

Q214 (MONITOR OUT)

E	2.87V
C	7.72V
B	3.51V

Q215 (VTR 1 OUT)

E	2.87V
C	7.72V
B	3.50V

Q216 (VTR 2 OUT)

E	2.92V
C	7.85V
B	3.55V

Q217 (MONITOR S-OUT)

E	2.88V
C	7.70V
B	3.51V

Q218 (MONITOR S-OUT)

E	3.34V
C	3.37V
B	4.05V

Q219 (VTR 2 OUT)

E	2.87V
C	7.66V
B	3.50V

Q220 (VTR 2 OUT)

E	2.89V
C	7.69V
B	3.51V

Q221 (MONITOR OUT)

E	7.03V
C	9.86V
B	7.72V

Q222 (VTR 1 OUT)

E	7.03V
C	9.84V
B	7.73V

Q223 (VTR 2 OUT)

E	7.16V
C	9.84V
B	7.85V

Q224 (MONITOR S-OUT)

E	7.02V
C	9.84V
B	7.70V

Q225 (MONITOR S-OUT)

E	9.72V
C	9.83V
B	3.37V

Q226 (VTR 2 OUT)

E	6.97V
C	9.83V
B	7.66V

Q227 (VTR 2 OUT)

E	7.00V
C	9.83V
B	7.69V

Q615

	POWER ON	POWER OFF
1	5.0V	
2	0V	SIGNAL
3	5.0V	
4	0V	SIGNAL
5	1.3V	SIGNAL
6	2.5V	SIGNAL
7	0V	SIGNAL
8	-5.0V	
9	0V	SIGNAL
10	0V	SIGNAL
11	0V	SIGNAL
12	0V	SIGNAL
13	0V	SIGNAL
14	-2.5V	
15	-2.4V	
16	5.0V	

Q617

	POWER ON: DSP ON DIGITAL OFF	POWER ON: DSP ON DIGITAL ON	POWER OFF
1	2.4V		SIGNAL
2	2.6V		SIGNAL
3	5.0V		
4	2.0V		SIGNAL
5	2.5V	NO CHANGE	NO CHANGE SIGNAL
6	2.5V	1.4V	3.66V SIGNAL
7	2.4V	NO CHANGE	NO CHANGE SIGNAL
8	0V		
9	5.0V		
10	1.2V		SIGNAL
11	1.2V		SIGNAL
12	0V		SIGNAL
13	2.4V		SIGNAL
14	2.5V		SIGNAL
15	1.3V		SIGNAL
16	5.0V		

PC-DSP 6

Q701

	DSP ON DIGITAL OFF	DSP ON DIGITAL ON
14	4.8V	
21	3.0V	
22	2.4V	SIGNAL
23	2.4V	SIGNAL
24	2.4V	SIGNAL
25	0V	
26	0V	
31	4.8V	
32	4.8V	
33	0V	
34	4.6V	
37	0V	
38	4.8V	
39	4.6V	
40	0V	
41	4.8V	
42	4.8V	
43	4.7V	
44	1.4V	
45	2.3V	
46	0V	
49	0V	
51	4.6V	
53	4.6V	
58	4.9V	
59	4.4V	
60	0V	
61	0.2V	

DIGITAL	CD		DAT		TV/BS	
	DSP OFF	DSP ON	DSP OFF	DSP ON	DSP OFF	DSP ON
ERR	4.77V	4.77V	4.77V	4.77V	4.78V	4.77V
DS	4.76V	4.78V	4.77V	4.78V	4.77V	4.77V

Q702

	DSP ON DIGITAL OFF	DSP ON DIGITAL ON
1	4.81V	
2	3.1V	SIGNAL
3	1.72V	SIGNAL
4	3.52V	SIGNAL
5	3.1V	SIGNAL
6	1.54V	SIGNAL
7	2.6V	SIGNAL
8	0V	
9	2.31V	NO CHANGE NO CHANGE SIGNAL
10	4.81V	
11	0V	
12	0.1V	SIGNAL
13	0.1V	SIGNAL
14	4.81V	
15	0V	SIGNAL
16	4.8V	

Q703

1	0V
2	0.1V
3	4.81V
4	0V
5	0V
6	0V
7	3.9V
8	0V
9	0.06V
10	4.81V
11	4.81V
12	4.81V
13	4.81V
14	0V
15	0V
16	4.81V

PC-DSP 9

Q712

	DSP ON DIGITAL OFF	DSP ON DIGITAL ON	
1	2.0V		SIGNAL
2	2.42V		SIGNAL
3	2.42V		SIGNAL
4	2.42V		SIGNAL
5	2.41V		SIGNAL
6	2.41V		SIGNAL
7	0V		SIGNAL
8	4.82V		
9	0V		
10	4.82V		
11	0V		
12	4.82V		
13	0V		
14	4.82V		

Q713

	DSP ON DIGITAL OFF	DSP ON DIGITAL ON	
1	4.82V		
2	4.8V		
3	2.41V		SIGNAL
4	4.82V		
5	4.82V		
6	0V		
7	0V		SIGNAL
8	2.4V		SIGNAL
9	2.43V		SIGNAL
10	4.82V		
11	2.43V		SIGNAL
12	2.4V		SIGNAL
13	4.8V		SIGNAL
14	4.82V		

Q714

1	4.8V
2	0V
3	0V
4	4.83V
5	0V
6	4.83V
7	0V
8	4.83V
9	0V
10	4.83V
11	0V
12	0V
13	4.8V
14	4.83V

Q622

E	0.6V
C	0V
B	0V

Q623

E	0.14V
C	9.68V
B	0.6V

Q624

Hi	-10.13V
OUT	-4.97V
C	0V

Q632

E	4.98V
C	-6.67V
B	-6.7V

Q633

E	0.03V
C	-6.62V
B	0V

REMOTE PCB

Q312

E	0V
C	3.7V
B	0V

PC-BUFFER EQ PCB

Q114

1	8.5V
2	Signal
3	0V
4	0V
5	-8.5V
6	0V
7	0V
8	Signal
9	NC

Q634

D	0V
G	-0.86V
S	0V

Q639

D	0V
G	-0.83V
S	0V

Q635

D	0V
G	-0.835V
S	0V

Q641 Rch (REAR)

E	0V
C	0V
B	-6.7V

Q636 Lch (FRONT ASEL DIRECT AMP)

E	0V
C	0V
B	-6.7V

Q637 Rch (FRONT ASEL DIRECT AMP)

E	0V
C	0V
B	-6.7V

Q638

D	0V
G	-0.83V
S	0V

Q642

E	0V
C	0V
B	-6.7V

PC-DSP 4

Q626

1	5.0V
2	SIGNAL
3	SIGNAL
4	SIGNAL
5	SIGNAL
6	SIGNAL
7	SIGNAL
8	0V
9	SIGNAL
10	SIGNAL
11	SIGNAL
12	SIGNAL
13	SIGNAL
14	SIGNAL
15	SIGNAL
16	5.0V

Q627

1	OSCILLATION
2	0V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	5.0V
11	0V
12	0V
13	0V
14	0V
15	0V
16	5.0V

Q530

1	SIGNAL
2	SIGNAL
3	SIGNAL
4	5.0V
5	5.0V
6	SIGNAL
7	SIGNAL
8	SIGNAL
9	SIGNAL
10	SIGNAL
11	SIGNAL
12	SIGNAL
13	5.0V

Q640

1	9.68V
2	0V
3	0V
4	0V
5	-10.13V
6	0V
7	0V
8	0V
9	9.68V

Q643

	POWER ON
1	5.0V
2	0.2V SIGNAL
3	0.15V SIGNAL
4	0.14V SIGNAL
5	0V
6	0.04V SIGNAL
7	0.04V SIGNAL
8	4.0V
9	5.0V

PC-DSP 1

Q601

1	9.68V
2	0V
3	0V
4	0V
5	-10.14V
6	0V
7	0.02V
8	0V
9	9.68V

Q602

1	9.68V
2	0.3V
3	0.3V
4	0.05V
5	-10.14V
6	0V
7	0V
8	0V
9	9.68V

Q503

1	9.68V
2	0V
3	0V
4	0V
5	-10.14V
6	0V
7	0V
8	0V
9	9.68V

Q604

1	9.68V
2	0V
3	-0.05V
4	0V
5	-10.13V
6	0V
7	0V
8	0V
9	9.68V

Q605

1	9.68V
2	0V
3	0V
4	0V
5	-10.14V
6	0V
7	0V
8	0V
9	9.68V

Q607

	POWER ON
1	9.7V
2	5.0V
3	0V
4	0.04V SIGNAL
5	0.04V SIGNAL
6	4.8V
7	0V
8	4.8V
9	4.8V
10	4.0V
11	0V
12	5.0V
13	5.0V
14	5.0V
15	4.6V
16	4.1V

Q610

	POWER ON	
1	0V	
2	0V	SIGNAL
3	0V	SIGNAL
4	-10.0	
5	0.01V	SIGNAL
6	0.01V	SIGNAL
7	0.03V	SIGNAL
8	10.0V	

Q611

1	9.68V
2	0V
3	0V
4	0V
5	-10.15V
6	0V
7	0V
8	0V
9	9.68V

Q628

1	5.0V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	5.0V
11	0V
12	0V
13	0V
14	0V
15	0V
16	5.0V

Q629

1	5.0V
2	SIGNAL
3	SIGNAL
4	SIGNAL
5	SIGNAL
6	SIGNAL
7	SIGNAL
8	0V
9	SIGNAL
10	SIGNAL
11	SIGNAL
12	SIGNAL
13	SIGNAL
14	SIGNAL
15	SIGNAL
16	5.0V

Q631

	POWER ON: DSP ON	POWER ON: DSP ON/OFF
1	0V	
2	5.0V	NO CHANGE
3	2.5V SIGNAL	AC NO CHANGE DSP
4	2.5V SIGNAL	DC NO CHANGE DC
5	2.5V SIGNAL	NO CHANGE DIGITAL ON OFF
6	2.5V SIGNAL	NO CHANGE
7	0V	NO CHANGE
8	2.5V SIGNAL	NO CHANGE
9	2.2V SIGNAL	NO CHANGE
10	0.44V SIGNAL	NO CHANGE
11	4.46V SIGNAL	NO CHANGE
12	2.85V SIGNAL	NO CHANGE
13	4.05V SIGNAL	NO CHANGE
14	5.0V	NO CHANGE

PC-DSP 7

Q704

	DSP ON DIGITAL OFF	DSP ON DIGITAL ON
1	2.4V	SIGNAL
2	2.4V	SIGNAL
3	4.8V	SIGNAL
4	2.6V	SIGNAL
5	3.1V	SIGNAL
6	3.5V	SIGNAL
7	0V	
8	3.1V	SIGNAL
9	3.2V	SIGNAL
10	3.0V	SIGNAL
11	4.8V	
12	0V	
13	4.81V	
14	4.82V	
15		

Q705

	DSP ON DIGITAL OFF	DSP ON DIGITAL ON
1	4.81V	
2	2.6V	SIGNAL
3	2.3V	SIGNAL
4	4.81V	
5	3.2V	SIGNAL
6	0V	
7	0V	
8	2.4V	SIGNAL
9	2.4V	SIGNAL
10	4.81V	
11	3.2V	NO CHANGE NO CHANGE SIGNAL
12	2.4V	SIGNAL
13	4.81V	
14	4.81V	

Q706

	DSP ON DIGITAL OFF	DSP ON DIGITAL ON
1	4.82V	
2	0V	
3	4.8V	
4	0V	
5	2.25V	
6	2.0V	
7	4.7V	
8	1.7V	NO CHANGE NO CHANGE SIGNAL
9	1.5V	SIGNAL
10	3.8V	
11	3.82V	
12	2.0V	SIGNAL
13	4.65V	SIGNAL
14	0V	
15	2.4V	SIGNAL
16	0V	
17	0V	
18	2.4V	SIGNAL
19	1.2V	SIGNAL
20	1.2V	SIGNAL
21	4.81V	
22	4.81V	
23	4.81V	
24	4.81V	
25	0V	
26	4.82V	
27	0V	
28	0V	

PC-DSP 8

Q707

	DSP ON DIGITAL OFF	DSP ON DIGITAL ON
1	0V	
2	4.8V	
3	2.4V	SIGNAL
4	2.4V	SIGNAL
5	2.4V	SIGNAL
6	2.4V	SIGNAL
7	2.4V NO CHANGE	NO CHANGE SIGNAL
8	0V	
9	2.4V NO CHANGE	NO CHANGE SIGNAL
10	2.4V	SIGNAL
11	2.4V	SIGNAL
12	2.4V	SIGNAL
13	2.3V	SIGNAL
14	4.9V	
15	0V	
16	4.8V	

Q708

1	0V
2	4.82V
3	0V
4	4.82V
5	0V
6	4.82V
7	0V
8	2.4V
9	2.4V
10	2.4V
11	2.4V
12	2.4V
13	4.84V

Q709

	DSP ON DIGITAL OFF	DSP ON DIGITAL ON
1	0V	
2	4.8V	
3	2.7V	SIGNAL
4	0V	SIGNAL
5	0V	SIGNAL
6	0V	SIGNAL
7	2.7V NO CHANGE	* 0V * * ** 0V SIGNAL
8	0V	
9	0V	SIGNAL
10	2.4V	
11	2.4V	
12	2.4V	
13	0V	
14	4.9V	
15	0V	
16	4.9V	

* DIGITAL ON
** DAT ON

DIGITAL	CD		DAT		TV/BS	
	DSP OFF	DSP ON	DSP OFF	DSP ON	DSP OFF	DSP ON
DSA	0V	0V	0V	0V	4.8V	4.8V
DSB	0V	0V	4.8V	4.8V	0V	0V

Q710

	DSP ON DIGITAL OFF	DSP ON DIGITAL ON
1	4.81V	
2	0V	
3	3.1V	SIGNAL
4	1.53V	SIGNAL
5	1.53V	SIGNAL
6	3.0V	SIGNAL
7	0V	
8	3.3V NO CHANGE	NO CHANGE SIGNAL
9	2.33V	SIGNAL
10	2.33V	SIGNAL
11	2.3V	SIGNAL
12	2.3V	SIGNAL
13	1.8V	SIGNAL
14	4.81V	

Q711

	DSP ON DIGITAL OFF	DSP ON DIGITAL ON
1	4.8V	
2	2.4V	SIGNAL
3	2.4V	SIGNAL
4	2.4V	SIGNAL
5	2.4V	SIGNAL
6	2.4V	SIGNAL
7	2.41V	
8	0V	SIGNAL
9	2.0V	SIGNAL
10	2.41V	SIGNAL
11	2.4V	SIGNAL
12	2.41V	SIGNAL
13	2.41V	SIGNAL
14	2.41V	SIGNAL
15	2.41V	SIGNAL
16	4.82V	

PC-FRONT 1

Q301 DATA IN POWER ON MODE IS THE SAME IN RESET MODNAL MODE.

1	0V	
2	0V	
3	4.85V	DSP ALL NO CHANGE
4	4.85V	
5	4.85V	
6	4.85V	
7	0.05V	DIGITAL INPUT ON 2.7V
8	4.72V	
9	0.1V	
10	0.1V	
11	0.1V	
12	0.1V	
13	0.1V	MUTE ON 4.35V
14	0V	MUTE ON 4.7V
15	4.13V	REMO.CON MASTER VOLUME UP →0V
16	4.13V	REMO.CON MASTER VOLUME UP →0V
17	4.7V	NO CHANGE
18	0V	
19	0V	
20	0V	
21	1.1V	SIGNAL
22	1.02V	SIGNAL
23	0V	
24	3.6V	MODE NO CHANGE 5V 0.28ms SIGNAL
25	0V	
26	0V	
27	0V	
28	0V	
29	0V	
30	0V	
31	1.4V	MODE NO CHANGE 5V 40ms SIGNAL
32	0.7V	SIGNAL
33	0.7V	SIGNAL
34	0.71V	SIGNAL
35	0.72V	
36	0.72V	
37	0V	
38	0V	
39	0V	
40	0V	
41	0V	
42	0V	
43	4.8V	
44	NOT MEASURABLE	SIGNAL
45	2.3V	
46	4.8V	NO CHANGE
47	4.8V	
48	0.1V	
49	4.8V	
50	0.1V	
51	4.7V	
52	4.7V	
53	4.7V	
54	4.3V	(BASS BOOST ON 0.04V)
55	0V	
56	0V	
57	0V	
58	4.94V	
59	0V	
60	0V	
61	0V	
62	0.05V	
63	0V	
64	0V	

*(TWO RED LEDS ON)

PC-FRONT 2

Q302

1			
2	0V	VTR1 ON	0.04V
3	0V	VTR2 ON	0.04V
4	0V	TAPE1 ON	0.04V
5	0V	TAPE2 ON	0.04V
6	0V	DAT ON	0.04V
7	0V	CD ON	0.04V
8	0V	TUNER ON	0.04V
9	0V	VTR3 ON	0.04V
10	0V	VD ON	0.04V
11	0V	BS ON	0.04V
12			
13			
14	0V	DO ON	0.04V
15	0V	D1 ON	0.04V
16	0V	D2 ON	0.04V
17	0V	D3 ON	0.04V
18	0V	E0 ON	0.04V
19			
20			
21			
22			
23			
24	0V	SUBEC ON	0.04V
25	0V	SUBEC ON	0.04V
26	0V	VTR1(P) ON	0.04V
27	0V	VTR2(P) ON	0.04V
28	0V	TV/BS(P)ON	0.04V
29	0V	VD(P) ON	0.04V
30	0V	VTR3(P) ON	0.04V
31			
32			
33			
34			
35			
36			
37	0V	DSP ON*	0.04V
38	5.0V		
39	0V		
40	0V		
41	0.05V		
42	5.0V		

Q303

1	26.3V
2	SIGNAL
3	SIGNAL
4	SIGNAL
5	SIGNAL
6	SIGNAL
7	SIGNAL
8	SIGNAL
9	SIGNAL
10	SIGNAL
11	SIGNAL
12	SIGNAL
13	SIGNAL
14	SIGNAL
15	SIGNAL
16	SIGNAL
17	SIGNAL
18	SIGNAL
19	SIGNAL
20	SIGNAL
21	SIGNAL
22	SIGNAL
23	SIGNAL
24	SIGNAL
25	SIGNAL
26	SIGNAL
27	SIGNAL
28	SIGNAL
29	SIGNAL
30	SIGNAL
31	SIGNAL
32	SIGNAL
33	SIGNAL
34	SIGNAL
35	SIGNAL
36	SIGNAL
37	SIGNAL
38	SIGNAL
39	SIGNAL
40	SIGNAL
41	SIGNAL
42	SIGNAL
43	SIGNAL
44	SIGNAL
45	SIGNAL
46	SIGNAL
47	SIGNAL
48	SIGNAL
49	SIGNAL
50	SIGNAL
51	SIGNAL
52	SIGNAL
53	SIGNAL
54	SIGNAL
55	SIGNAL
56	SIGNAL
57	SIGNAL
58	SIGNAL
59	SIGNAL
60	SIGNAL
61	SIGNAL
62	SIGNAL
63	SIGNAL
64	26.3V
65	SIGNAL
66	SIGNAL
67	5.0V
68	SIGNAL
69	SIGNAL
70	SIGNAL
71	SIGNAL
72	SIGNAL
73	0V
74	SIGNAL
75	SIGNAL
76	SIGNAL
77	SIGNAL
78	0V
79	SIGNAL
80	SIGNAL

Q304

1	4.95V
2	4.15V
3	4.15V
4	0V
5	0V
6	4.95V
7	0V
8	0V
9	0V

Q305

POWER	5.0V
REMOTE	4.7V
G	0V

Q306

IN	5.0V
OUT	4.8V
G	0V

Q307

E	0V
C	2.3V
B	0V

Q308

E	0V
C	2.3V
B	0V

Q309

E	0V
C	2.3V
B	0V

PC-SELECT 1

Q101

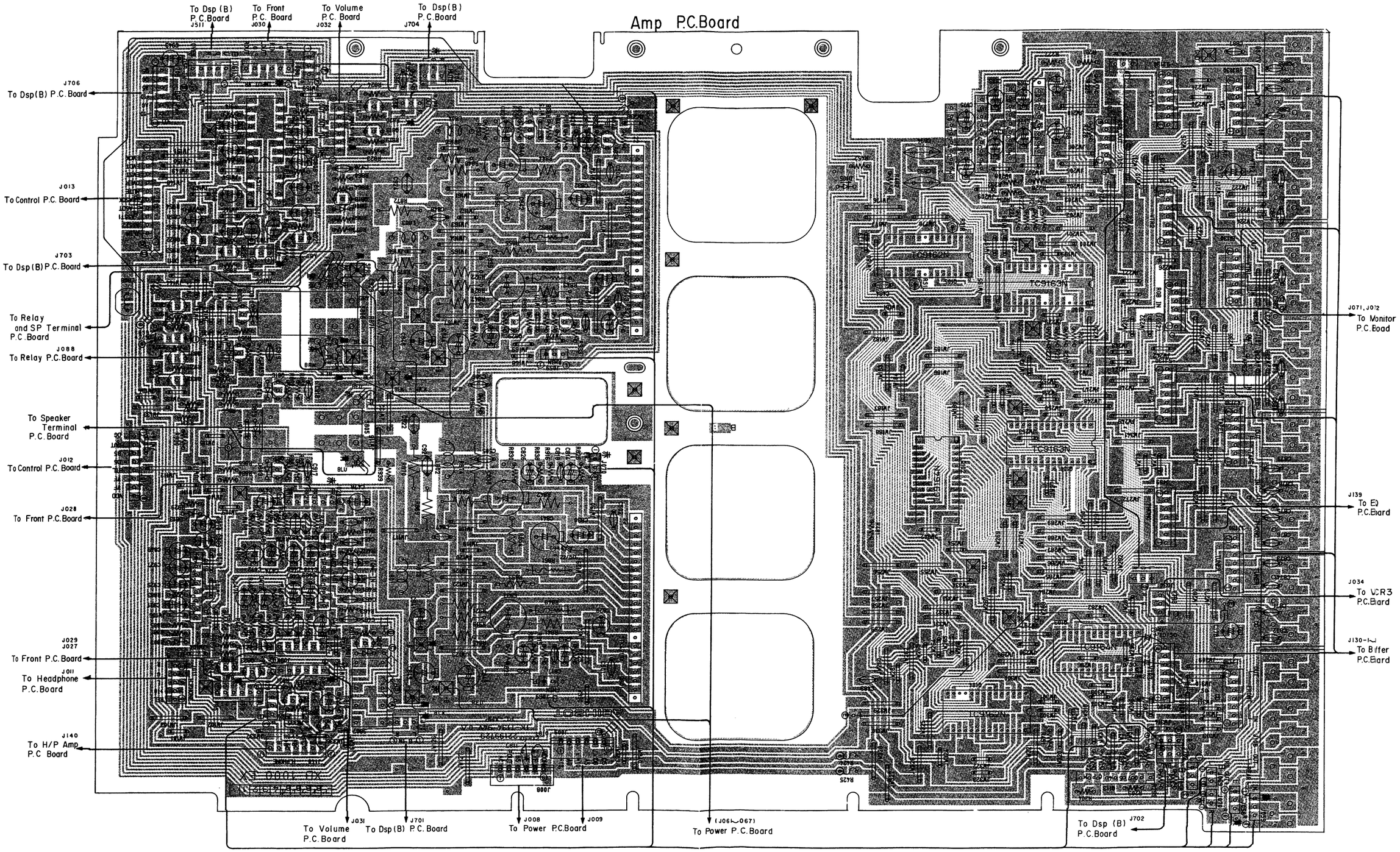
1	-9.37V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0.11V
14	0V
15	0.11V
16	0.11V
17	0V
18	0V
19	0V
20	0V
21	0V
22	0V
23	0V
24	0V
25	0V
26	0V
27	0V
28	8.95V

Q102

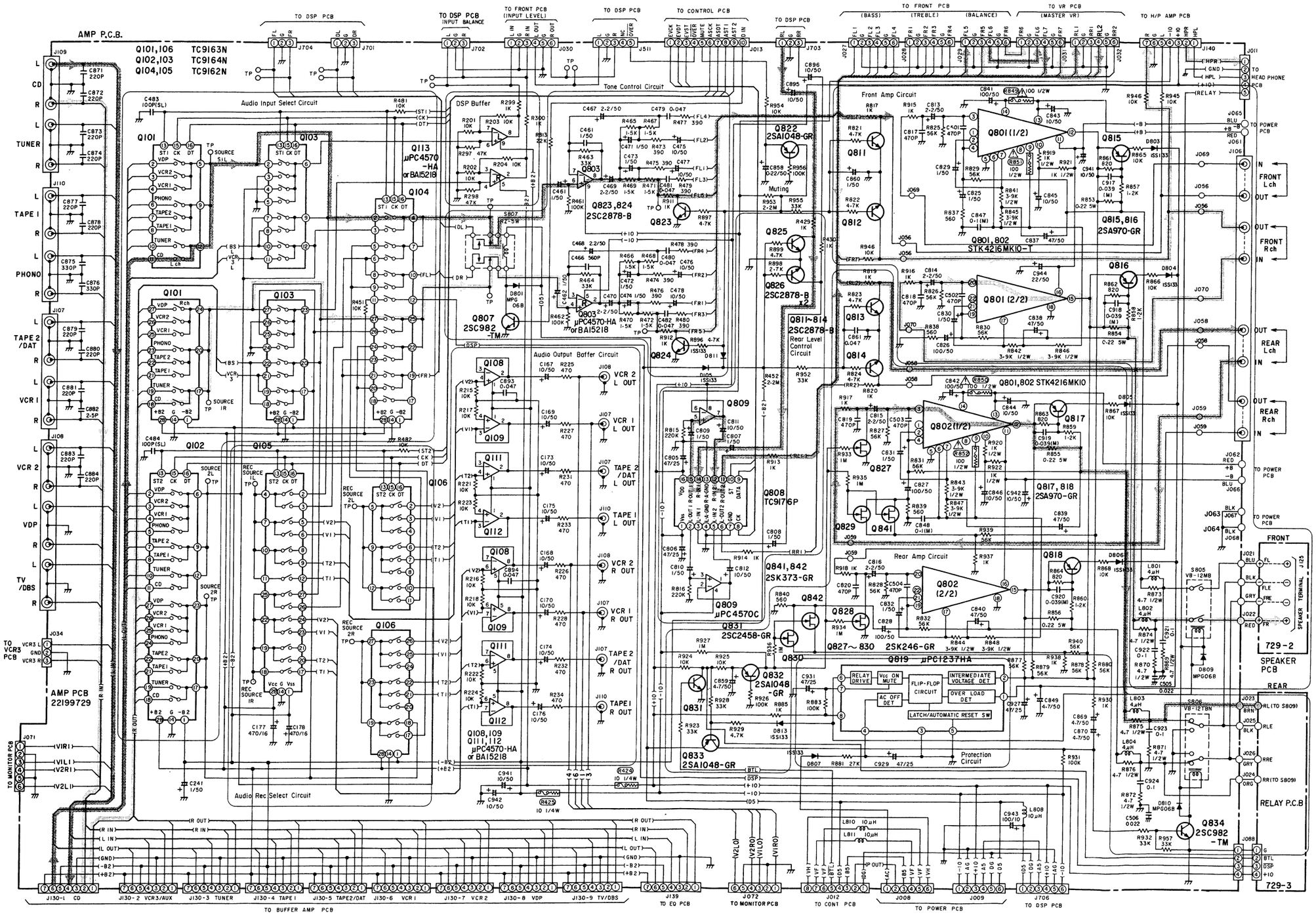
1	-9.37V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0.11V
14	0V
15	0.11V
16	0.11V
17	0V
18	0V
19	0V
20	0V
21	0V
22	0V
23	0.02V
24	0.02V
25	0.02V
26	0V
27	0V
28	8.94V

Q103

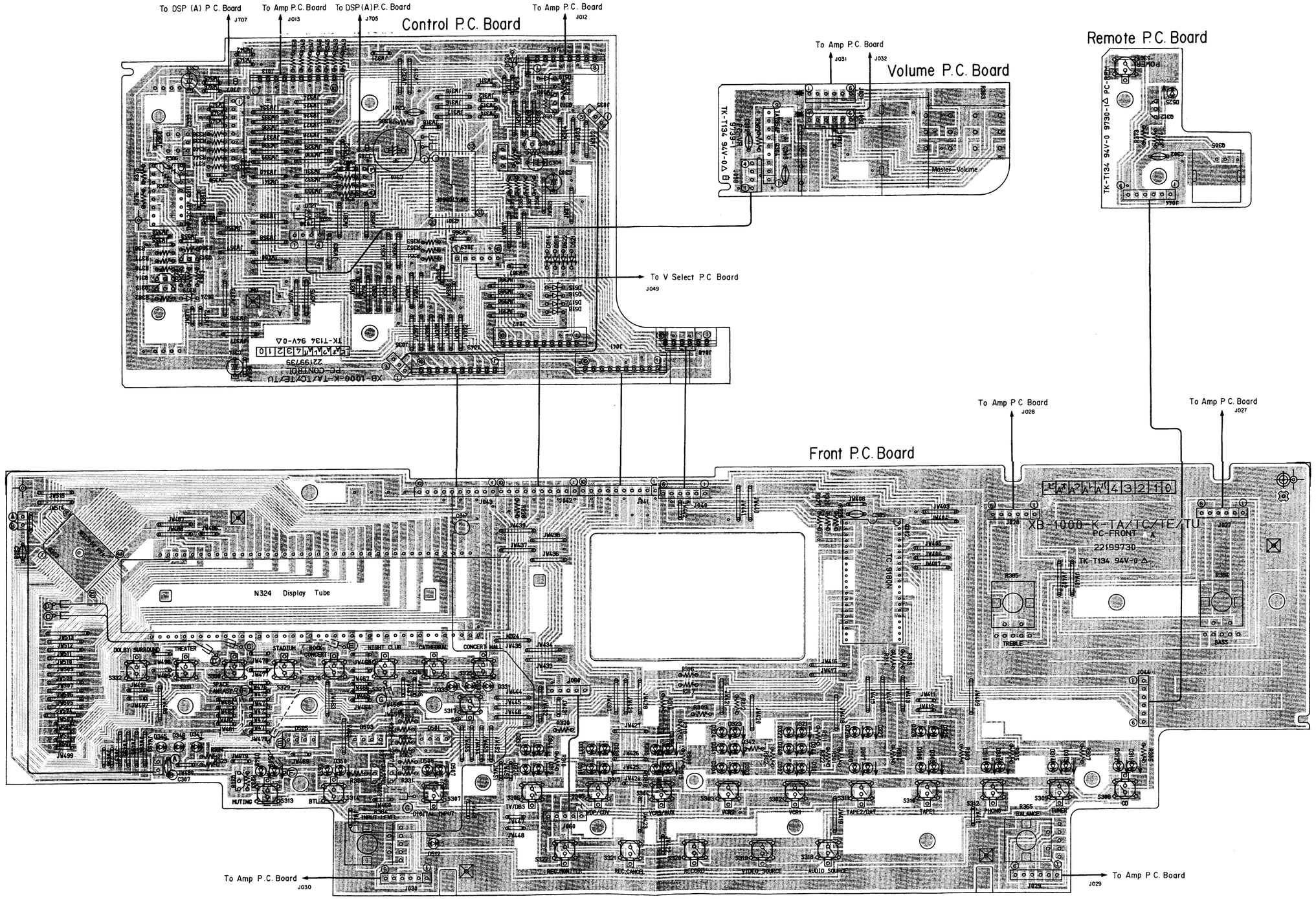
ELECTRICAL PARTS LOCATIONS


Amp P.C.Board
To Dsp (B) P.C.Board J511
To Front P.C. Board J030
To Volume P.C. Board J032
To Dsp(B) P.C.Board J704
J706 To Dsp(B) P.C.Board
J013 To Control P.C. Board
J703 To Dsp(B) P.C.Board
To Relay and SP Terminal P.C.Board
J088 To Relay P.C.Board
To Speaker Terminal P.C.Board
J012 To Control P.C.Board
J028 To Front P.C.Board
J029 J027 To Front P.C.Board
J011 To Headphone P.C.Board
J140 To H/P Amp P.C Board
J071, J012 To Monitor P.C.Boad
J139 To EQ P.C.Board
J034 To VCR3 P.C.Board
J130-1~J To Biffer P.C.Board
J031 To Volume P.C.Board
J701 To Dsp(B) P.C. Board
J008 J009 To Power P.C.Board
(J061~067) To Power P.C.Board
To Dsp (B) J702 P.C.Board

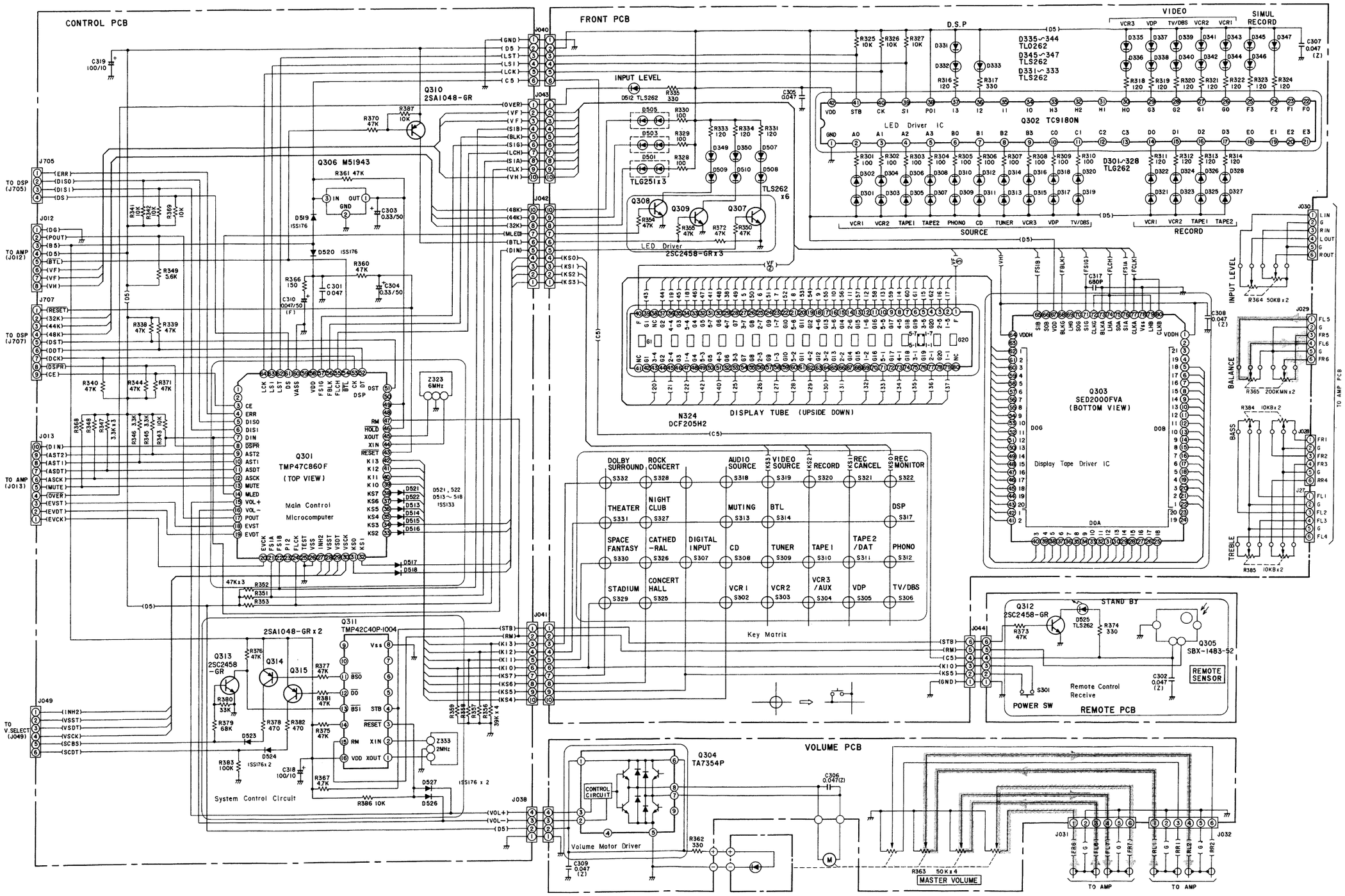
SCHEMATIC DIAGRAM



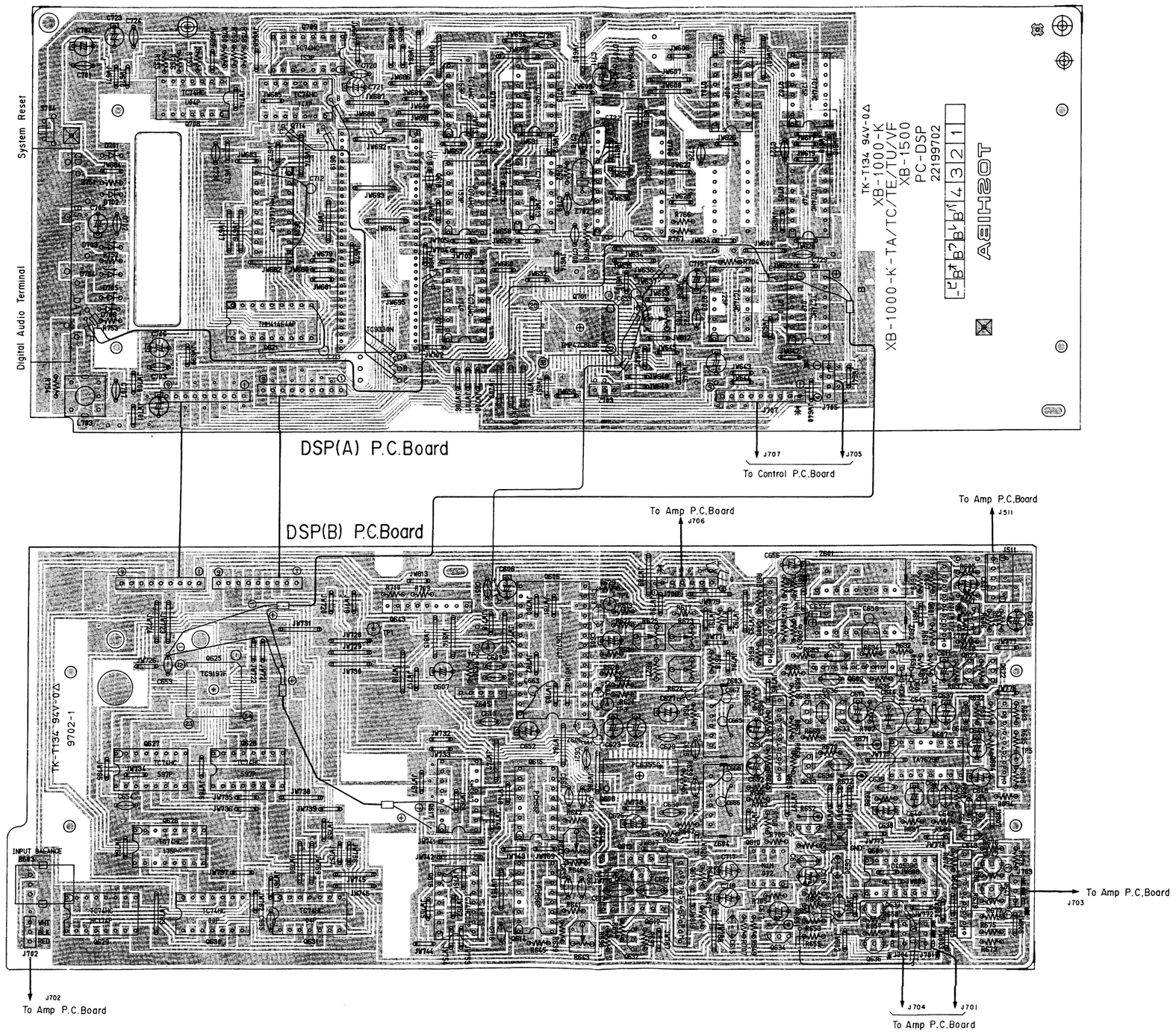
ELECTRICAL PARTS LOCATIONS



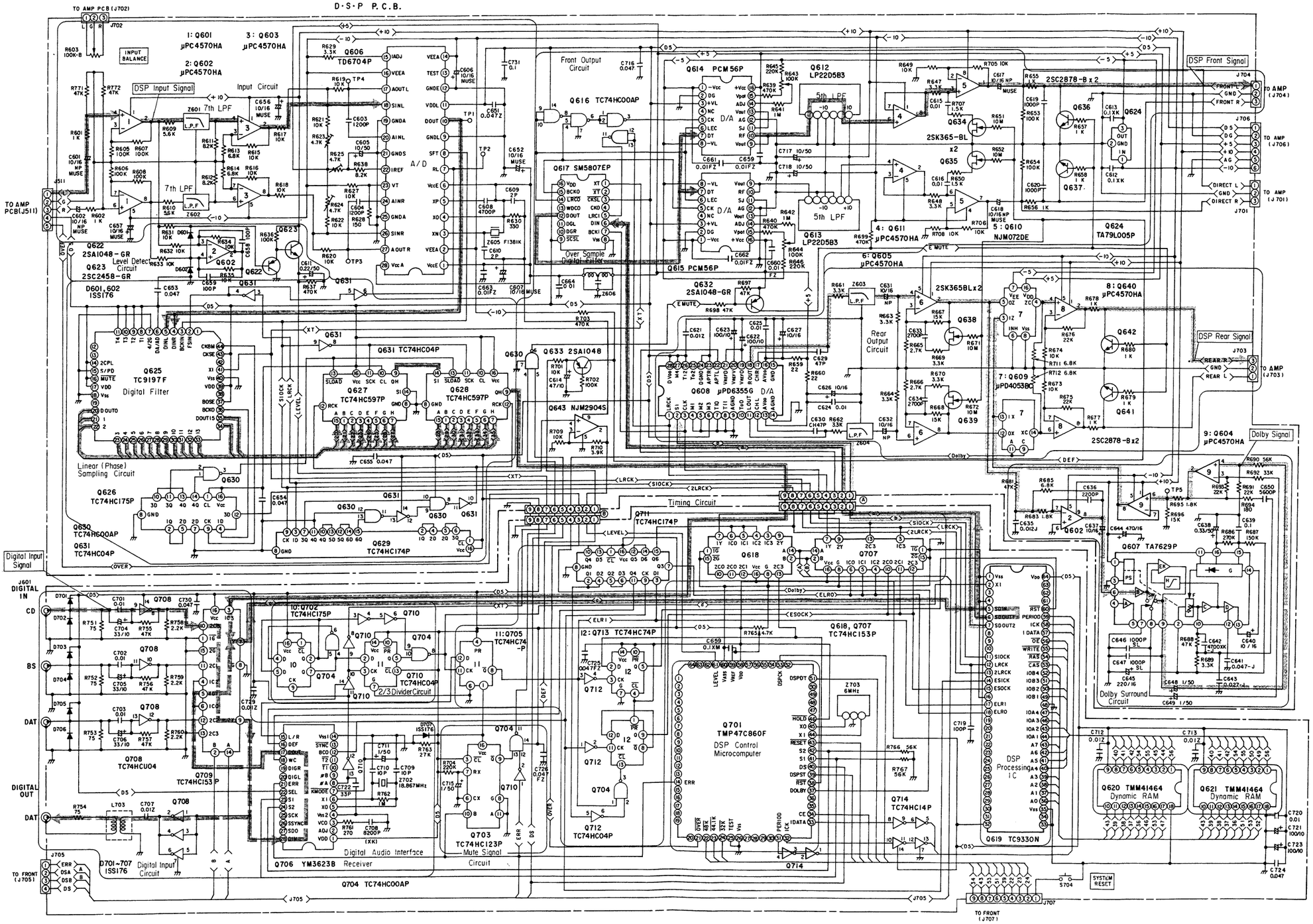
SCHEMATIC DIAGRAM



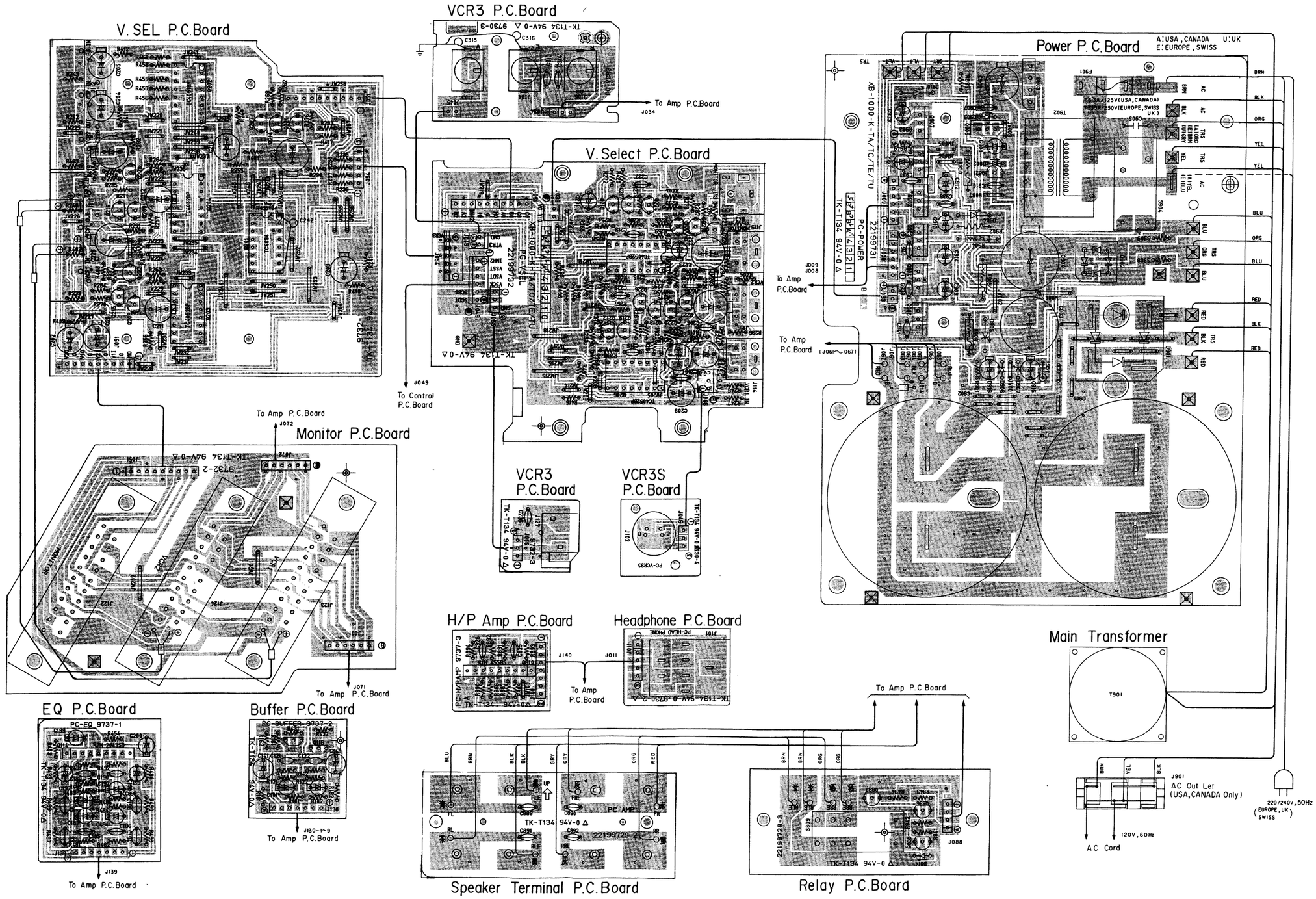
ELECTRICAL PARTS LOCATIONS



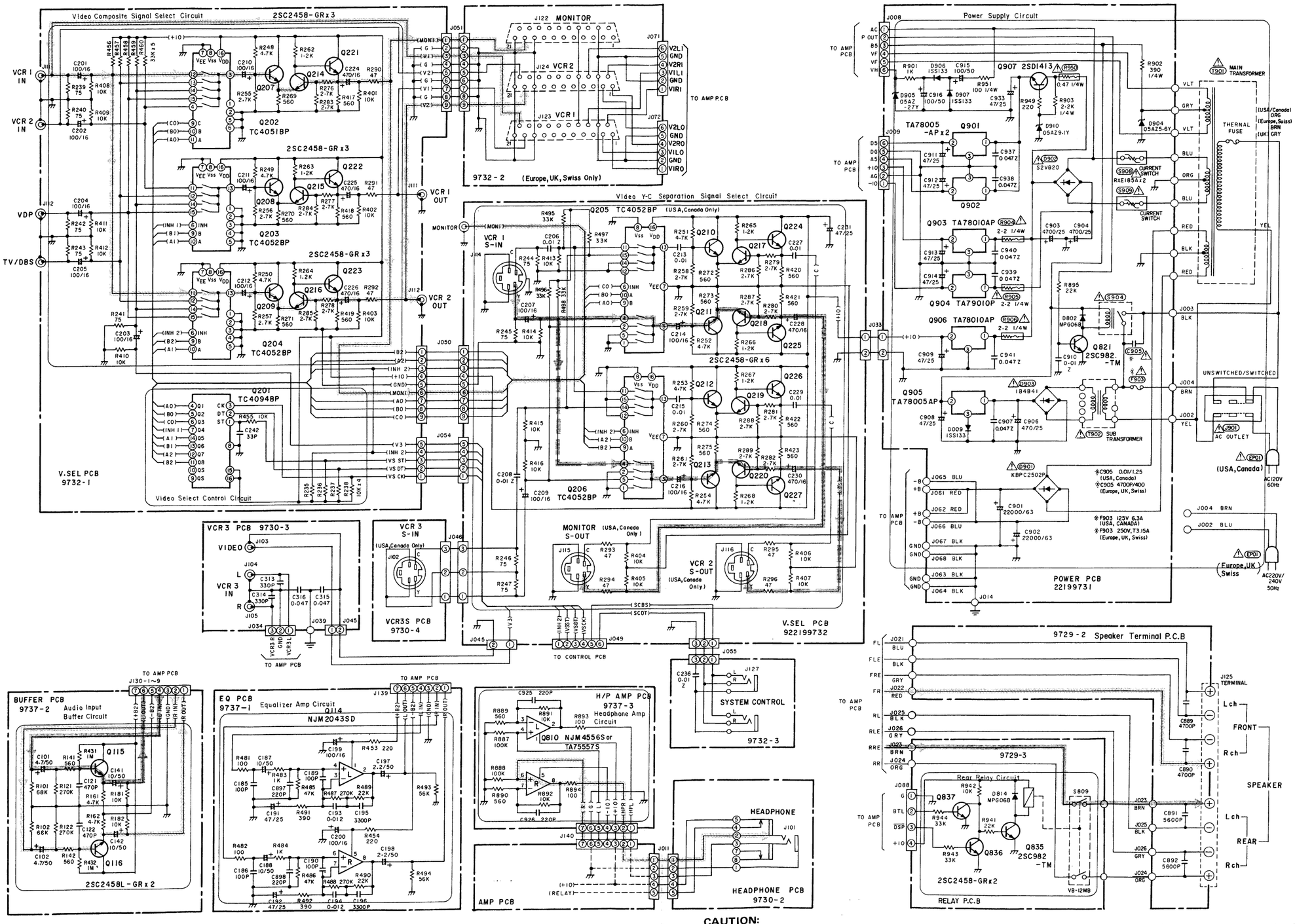
SCHEMATIC DIAGRAM



ELECTRICAL PARTS LOCATIONS

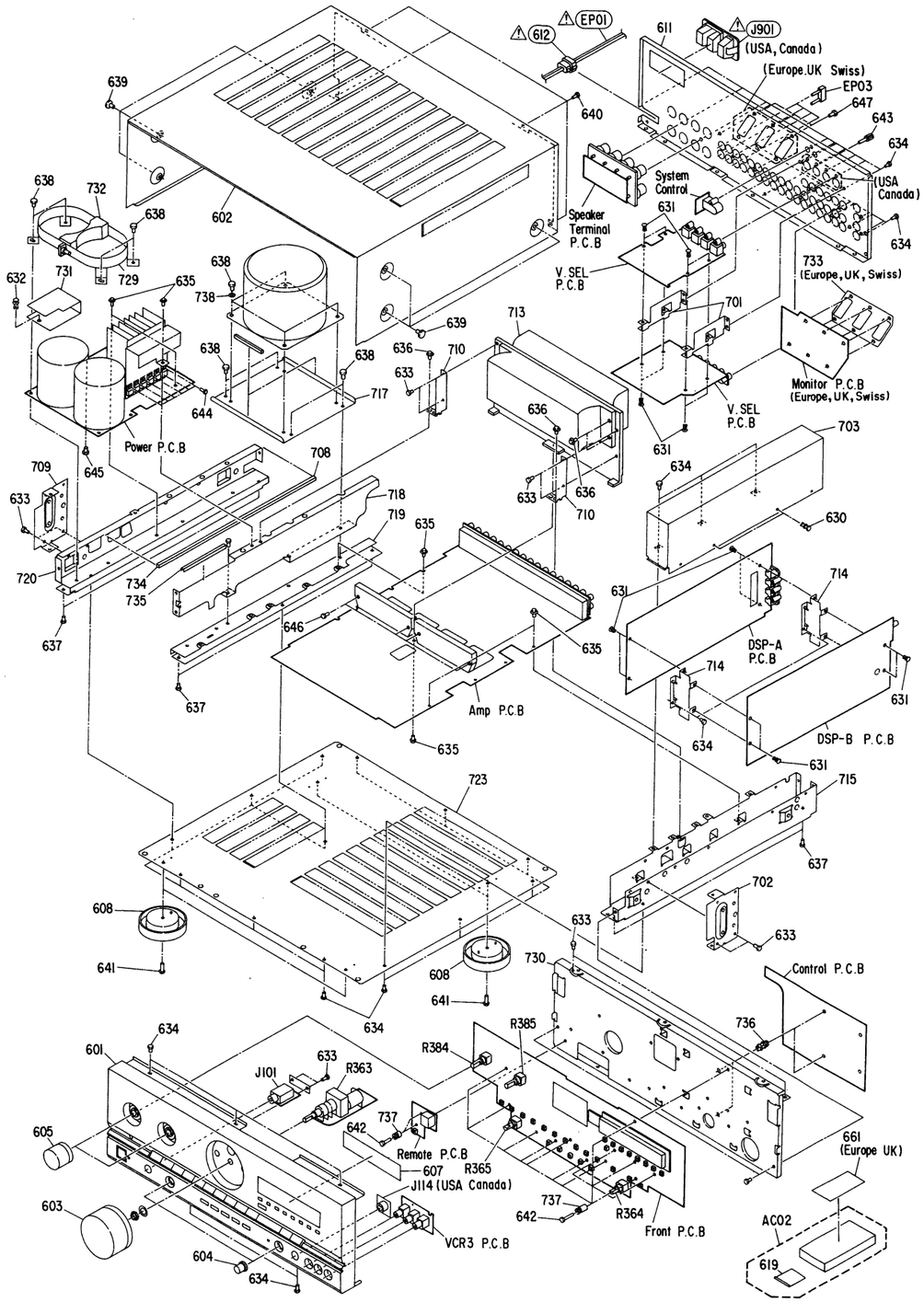


SCHEMATIC DIAGRAM



CAUTION:
The ⚠ mark, the Location No. circled with oval in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

CABINET EXPLODED VIEW



NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CABINET PARTS

CAUTION:
The ⚠ mark, the Location No. circled with oval in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

Location No.	Part No.	Description
601	20713880	PANEL ASSY, FRONT (USA,CANADA)
601	20713886	PANEL ASSY, FRONT (EURU, UK, SWISS)
602	20823603	TOP COVER (USA,CANADA)
602	20823608	TOP COVER (EURO,UK,SWISS)
603	22884995	KNOB ASSY MASTER VOLUME
604	22885602	KNOB BALAN/INPUT LEV
605	22884998	KNOB ASSY BASS/TRABLE
607	22837932	FILTER, DISPLAY TUBE
608	22874543	FOOT
611	22838527	JACK PLATE (USA)
611	22838528	JACK PLATE (CANADA)
611	22838529	JACK PLATE (EUROPE, SWISS)
611	22838530	JACK PLATE (UK)
⚠ 612	25844322	BUSH, CORD
619	22882281	COVER, BATTERY (RM-1000XBA)
619	22882282	COVER, BATTERY (RM-1000XBE)
630	22705021	PLASTIC RIVET, 3.0X3.5MM
631	22705020	PLASTIC RIVET, 3.0X4.5MM
632	22705022	PLASTIC RIVET, 3.0X5.5MM
633	22707842	SCREW, 3.0X8MM, Z, 2DTBID
634	22707911	SCREW, 3.0X8MM, B, 2DTBID
635	22708045	SCREW, 3.0X8MM, Z, 2DTPAN
636	22707802	SCREW, 3.0X12MM, Z, 2DTBID
637	22709282	SCREW, 3.0X8MM, B, 2DTPAN
638	22707185	SCREW, 4.0X8MM, B, FTBID
639	22709521	SCREW, 5.0X8MM, B, DTBID
640	22707885	SCREW, 3.0X8MM, B, 2DTBID
641	22703670	SCREW, 3.0X16MM, B, 2DTPANW
642	22707865	SCREW, 3.0X20MM, DTBID
643	20794122	SCREW, GROUND
644	22708542	SCREW, 3.0X8MM, Z, BID
645	22707030	SCREW, 3.0X16MM, B, BID
646	22707835	SCREW, 3.0X16MM, Z, 2DTBID
661	22906964	LABEL, RM-1000XBE (EUROPE, UK, SWISS)

PARTS LIST

CAUTION:
The ⚠ mark, the Location No. circled with oval in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

ABBREVIATIONS

1. **CAPACITOR:** CD — Ceramic Disk, PF — Plastic Film, BL — Barrier Layer, EL — Electrolytic, MY — Mylar, PP — Polypropylene, PS — Polystyrene, TT — Tantalum, PE — Polyethylene
   MFD — Microfarad, PF — Picofarad, V — Voltage, NP — Non Polarity
2. **RESISTOR:** CF — Carbon Film, CC — Carbon Composition, OMF — Oxide Metal Film, MF — Metal Film
   K — Kilo (1000), M — Mega (1000000)
3. **TOLERANCE**

Symbol	F	G	J	K	M	N	Z	P
%	±1	±2	±5	±10	±20	±30	−20+80	0+100

Symbol	C	D
pF	±0.25	±0.5

IC/TRANSISTORS

Location No.	Part No.	Description
Q101	B0411630	IC, TC9163N
Q102	B0411640	IC, TC9164N
Q103	B0411640	IC, TC9164N
Q104	B0411620	IC, TC9162N
Q105	B0411620	IC, TC9162N
Q106	B0411630	IC, TC9163N
Q108	22128056	IC, UPC4570HA
Q109	22128056	IC, UPC4570HA
Q111	22128056	IC, UPC4570HA
Q112	22128056	IC, UPC4570HA
Q113	22128056	IC, UPC4570HA
Q114	22128047	IC, NJM2043SD
Q115	A6332441	TRANSISTOR, 2SC2458L-GR
Q116	A6332441	TRANSISTOR, 2SC2458L-GR
Q201	B0470942	IC, TC4094BP
Q202	B0470512	IC, TC4051BP
Q203	B0470522	IC, TC4052BP
Q204	B0470522	IC, TC4052BP
Q205	B0470522	IC, TC4052BP (USA,CANADA)
Q206	B0470522	IC, TC4052BP (USA,CANADA)
Q207	A6332440	TRANSISTOR, 2SC2458-GR
Q208	A6332440	TRANSISTOR, 2SC2458-GR
Q209	A6332440	TRANSISTOR, 2SC2458-GR
Q210	A6332440	TRANSISTOR, 2SC2458-GR (USA,CANADA)
Q211	A6332440	TRANSISTOR, 2SC2458-GR (USA,CANADA)
Q212	A6332440	TRANSISTOR, 2SC2458-GR (USA,CANADA)
Q213	A6332440	TRANSISTOR, 2SC2458-GR (USA,CANADA)
Q214	A6332440	TRANSISTOR, 2SC2458-GR
Q215	A6332440	TRANSISTOR, 2SC2458-GR
Q216	A6332440	TRANSISTOR, 2SC2458-GR
Q217	A6332440	TRANSISTOR, 2SC2458-GR (USA,CANADA)
Q218	A6332440	TRANSISTOR, 2SC2458-GR (USA,CANADA)
Q219	A6332440	TRANSISTOR, 2SC2458-GR (USA,CANADA)
Q220	A6332440	TRANSISTOR, 2SC2458-GR (USA,CANADA)
Q221	A6332440	TRANSISTOR, 2SC2458-GR
Q222	A6332440	TRANSISTOR, 2SC2458-GR
Q223	A6332440	TRANSISTOR, 2SC2458-GR
Q224	A6332440	TRANSISTOR, 2SC2458-GR (USA,CANADA)
Q225	A6332440	TRANSISTOR, 2SC2458-GR (USA,CANADA)
Q226	A6332440	TRANSISTOR, 2SC2458-GR (USA,CANADA)
Q227	A6332440	TRANSISTOR, 2SC2458-GR (USA,CANADA)
Q301	22128746	IC, TMP47P860F-Z
Q302	B0411800	IC, TC9180N
Q303	22128487	IC, SED2000FVA
Q304	B0325460	IC, TA7354P
Q305	22128456	IC, SBX1483-52
Q306	22117892	IC, M51943BSL
Q307	A6332440	TRANSISTOR, 2SC2458-GR
Q308	A6332440	TRANSISTOR, 2SC2458-GR
Q309	A6332440	TRANSISTOR, 2SC2458-GR
Q310	A6534440	TRANSISTOR, 2SA1048-GR
Q311	22128747	IC, TMP42C40P-1004
Q312	A6332440	TRANSISTOR, 2SC2458-GR
Q313	A6332440	TRANSISTOR, 2SC2458-GR
Q314	A6534440	TRANSISTOR, 2SA1048-GR
Q315	A6534440	TRANSISTOR, 2SA1048-GR
Q601	22128056	IC, UPC4570HA
Q602	22128056	IC, UPC4570HA
Q603	22128056	IC, UPC4570HA
Q604	22128056	IC, UPC4570HA
Q605	22128056	IC, UPC4570HA
Q606	B0272690	IC, TD6704P
Q607	B0356150	IC, TA7629P
Q608	22128306	IC, UPD6355G
Q609	22117199	IC, UPD4053BC
Q610	22117053	IC, NJM072D-E
Q611	22128056	IC, UPC4570HA
Q612	22128521	IC, LP22D5B3YS

Location No.	Part No.	Description
Q613	22128521	IC, LP22D5B3YS
Q614	22128109	IC, PCM56P
Q615	22128109	IC, PCM56P
Q616	B0485583	IC, TC74HC00AP
Q617	22128323	IC, SM5807BP
Q618	B0486153	IC, TC74HC153P
Q619	B0413629	IC, TC9330N-004
Q620	B0433560	IC, TMM41464AP-12
Q621	B0433560	IC, TMM41464AP-12
Q622	A6534440	TRANSISTOR, 2SA1048-GR
Q623	A6332440	TRANSISTOR, 2SC2458-GR
Q624	B0376500	IC, TA79L005P
Q625	B0411971	IC, TC9197F-BS
Q626	B0486175	IC, TC74HC175P
Q627	B0486597	IC, TC74HC597P
Q628	B0486597	IC, TC74HC597P
Q629	B0486174	IC, TC74HC174P
Q630	B0485583	IC, TC74HC00AP
Q631	B0485610	IC, TC74HC04P
Q632	A6534440	TRANSISTOR, 2SA1048-GR
Q633	A6534440	TRANSISTOR, 2SA1048-GR
Q634	A6058730	TRANSISTOR, 2SK365-BL, FET
Q635	A6058730	TRANSISTOR, 2SK365-BL, FET
Q637	A6342210	TRANSISTOR, 2SC2878-B
Q638	A6058730	TRANSISTOR, 2SK365-BL, FET
Q638	A6342210	TRANSISTOR, 2SC2878-B
Q639	A6058730	TRANSISTOR, 2SK365-BL, FET
Q640	22128056	IC, UPC4570HA
Q641	A6342210	TRANSISTOR, 2SC2878-B
Q642	A6342210	TRANSISTOR, 2SC2878-B
Q643	22128061	IC, NJM2904S
Q701	22128563	IC, TMP47C860F-2882Z(F)
Q702	B0486175	IC, TC74HC175P
Q703	B0486123	IC, TC74HC123P
Q704	B0485583	IC, TC74HC00AP
Q705	B0486074	IC, TC74HC74P
Q706	22128488	IC, YM3623B
Q707	B0486153	IC, TC74HC153P
Q708	B0486004	IC, TC74HCU04P
Q709	B0486153	IC, TC74HC153P
Q710	B0485610	IC, TC74HC04P
Q711	B0486174	IC, TC74HC174P
Q712	B0485610	IC, TC74HC04P
Q713	B0486074	IC, TC74HC74P
Q714	B0486014	IC, TC74HC14P
Q801	22128595	IC, STK4216MK10-T
Q802	22128595	IC, STK4216MK10-T
Q803	22128056	IC, UPC4570HA
Q807	A6753140	TRANSISTOR, 2SC982TM
Q808	B0411760	IC, TC9176P
Q809	22128264	IC, UPC4570C
Q810	22117838	IC, NJM4556S
Q811	A6342210	TRANSISTOR, 2SC2878-B
Q812	A6342210	TRANSISTOR, 2SC2878-B
Q813	A6342210	TRANSISTOR, 2SC2878-B
Q814	A6342210	TRANSISTOR, 2SC2878-B
Q815	A6533625	TRANSISTOR, 2SA970-GR
Q816	A6533625	TRANSISTOR, 2SA970-GR
Q817	A6533625	TRANSISTOR, 2SA970-GR
Q818	A6533625	TRANSISTOR, 2SA970-GR
Q819	22128492	IC, UPC1237H
Q821	A6753140	TRANSISTOR, 2SC982TM
Q822	A6534440	TRANSISTOR, 2SA1048-GR
Q823	A6342210	TRANSISTOR, 2SC2878-B
Q824	A6342210	TRANSISTOR, 2SC2878-B
Q825	A6342210	TRANSISTOR, 2SC2878-B
Q826	A6342210	TRANSISTOR, 2SC2878-B
Q827	A6044630	TRANSISTOR, 2SK246-GR, FET
Q828	A6044630	TRANSISTOR, 2SK246-GR, FET
Q829	A6044630	TRANSISTOR, 2SK246-GR, FET
Q830	A6044630	TRANSISTOR, 2SK246-GR, FET
Q831	A6332440	TRANSISTOR, 2SC2458-GR
Q832	A6534440	TRANSISTOR, 2SA1048-GR
Q833	A6534440	TRANSISTOR, 2SA1048-GR
Q834	A6753140	TRANSISTOR, 2SC982TM
Q835	A6753140	TRANSISTOR, 2SC982TM
Q836	A6332440	TRANSISTOR, 2SC2458-GR
Q837	A6332440	TRANSISTOR, 2SC2458-GR
Q841	A6059510	TRANSISTOR, 2SK373-GR, FET
Q842	A6059510	TRANSISTOR, 2SK373-GR, FET
Q901	B0372540	IC, TA78005AP
Q902	B0372540	IC, TA78005AP
Q903	B0373000	IC, TA78010AP
Q904	B0374990	IC, TA79010P
Q905	B0372540	IC, TA78005AP
Q906	B0373000	IC, TA78010AP
Q907	A6868350	TRANSISTOR, 2SD1413

DIODE

D105	22119248	DIODE, 1SS133T-77
D301	A8607190	DIODE, TLG262, LED
D302	A8607190	DIODE, TLG262, LED
D303	A8607190	DIODE, TLG262, LED
D304	A8607190	DIODE, TLG262, LED
D305	A8607190	DIODE, TLG262, LED
D306	A8607190	DIODE, TLG262, LED
D307	A8607190	DIODE, TLG262, LED
D308	A8607190	DIODE, TLG262, LED
D309	A8607190	DIODE, TLG262, LED
D310	A8607190	DIODE, TLG262, LED
D311	A8607190	DIODE, TLG262, LED
D312	A8607190	DIODE, TLG262, LED
D313	A8607190	DIODE, TLG262, LED
D314	A8607190	DIODE, TLG262, LED
D315	A8607190	DIODE, TLG262, LED
D316	A8607190	DIODE, TLG262, LED
D317	A8607190	DIODE, TLG262, LED
D318	A8607190	DIODE, TLG262, LED

Location No.	Part No.	Description
D319	A8607190	DIODE, TLG262, LED
D320	A8607190	DIODE, TLG262, LED
D321	A8636235	DIODE, TLS262, LED
D322	A8636235	DIODE, TLS262, LED
D323	A8636235	DIODE, TLS262, LED
D324	A8636235	DIODE, TLS262, LED
D325	A8636235	DIODE, TLS262, LED
D326	A8636235	DIODE, TLS262, LED
D327	A8636235	DIODE, TLS262, LED
D328	A8636235	DIODE, TLS262, LED
D331	A8636235	DIODE, TLS262, LED
D332	A8636235	DIODE, TLS262, LED
D333	A8636235	DIODE, TLS262, LED
D335	A8613315	DIODE, TLO262, LED
D336	A8613315	DIODE, TLO262, LED
D337	A8613315	DIODE, TLO262, LED
D338	A8613315	DIODE, TLO262, LED
D339	A8613315	DIODE, TLO262, LED
D340	A8613315	DIODE, TLO262, LED
D341	A8613315	DIODE, TLO262, LED
D342	A8613315	DIODE, TLO262, LED
D343	A8613315	DIODE, TLO262, LED
D344	A8613315	DIODE, TLO262, LED
D345	A8636235	DIODE, TLS262, LED
D346	A8636235	DIODE, TLS262, LED
D347	A8636235	DIODE, TLS262, LED
D349	A8636235	DIODE, TLS262, LED
D350	A8636235	DIODE, TLS262, LED
D501	A8607100	DIODE, TLG251, LED
D502	A8607100	DIODE, TLG251, LED
D503	A8607100	DIODE, TLG251, LED
D508	A8636235	DIODE, TLS262, LED
D509	A8636235	DIODE, TLS262, LED
D510	A8636235	DIODE, TLS262, LED
D512	A8636235	DIODE, TLS262, LED
D513	22119248	DIODE, 1SS133T-77
D514	22119248	DIODE, 1SS133T-77
D515	22119248	DIODE, 1SS133T-77
D516	22119248	DIODE, 1SS133T-77
D517	22119248	DIODE, 1SS133T-77
D518	22119248	DIODE, 1SS133T-77
D519	A7160570	DIODE, 1SS176
D520	A7160570	DIODE, 1SS176
D521	22119248	DIODE, 1SS133T-77
D522	22119248	DIODE, 1SS133T-77
D523	A7160570	DIODE, 1SS176
D524	A7160570	DIODE, 1SS176
D525	A8636235	DIODE, TLS262, LED
D526	A7160570	DIODE, 1SS176
D527	A7160570	DIODE, 1SS176
D601	22119248	DIODE, 1SS133T-77
D602	22119248	DIODE, 1SS133T-77
D701	22119248	DIODE, 1SS133T-77
D702	22119248	DIODE, 1SS133T-77
D703	22119248	DIODE, 1SS133T-77
D704	22119248	DIODE, 1SS133T-77
D705	22119248	DIODE, 1SS133T-77
D706	22119248	DIODE, 1SS133T-77
D707	22119248	DIODE, 1SS133T-77
D801	22119305	DIODE, MPG06B
D802	22119305	DIODE, MPG06B
D803	22119248	DIODE, 1SS133T-77
D804	22119248	DIODE, 1SS133T-77
D805	22119248	DIODE, 1SS133T-77
D806	22119248	DIODE, 1SS133T-77
D807	22119248	DIODE, 1SS133T-77
D809	22119305	DIODE, MPG06B
D810	22119305	DIODE, MPG06B
D811	22119248	DIODE, 1SS133T-77
D813	22119248	DIODE, 1SS133T-77
D814	22119305	DIODE, MPG06B
⚠ D901	22119481	DIODE, KBPC2502
⚠ D902	22115438	DIODE, S2VB20
⚠ D903	A7670800	DIODE, 1B4B41
D904	A7112400	DIODE, 05AZ5.6-Y, ZENER
D905	A7113680	DIODE, 05AZ27-Y, ZENER
D906	22119248	DIODE, 1SS133T-77
D907	22119248	DIODE, 1SS133T-77
D909	22119248	DIODE, 1SS133T-77
D910	A7112800	DIODE, 05AZ9.1-Y, ZENER

ELECTRICAL PARTS

⚠ EP01	22176628	POWER CORD (UK)
⚠ EP01	22176757	POWER CORD (USA,CANADA)
⚠ EP01	22176802	POWER CORD (EUROPE)
⚠ EP01	22176804	POWER CORD (SWISS)
EP02	22165047	HOLDER, FUSE
EP03	22197307	PLUG, SHORT, 2P SHORTING PIN
⚠ F901	22144385	FUSE, 250V, T3.15A (EUROPE, SWISS)
⚠ F901	22144519	FUSE, 250V, T3.15A (UK)
⚠ F901	22144535	FUSE, 250V, T6.3A (USA,CANADA)
J101	22198378	JACK, 6.0MM HEADPHONE
J102	22198508	JACK, DIN, 4P VCR3 S-IN(US,CN)
J103	22198509	JACK, US-1P VCR3 IN
J104	22198509	JACK, US-1P VCR3 IN

Location No.	Part No.	Description
J105	22198509	JACK, US-1P VCR3 IN
J106	22198381	JACK, US-8P FRONT/REAR INOUT
J107	22198381	JACK, US-8P VCR12/TAPE2
J108	22198381	JACK, US-8P VDP/VCR2/TV,DBS
J109	22198510	JACK, US-4P TUNER/CD
J110	22198511	JACK, US-6P TAPE1/PHONO
J111	22198382	JACK, US-3P VCR/VC.R2/VCR1
J112	22198382	JACK, US-3P VDP/TV.DBS/VCR2
J113	22198383	JACK, US-1P MONITOR
J114	22198380	JACK, DIN, 4P VCR S-IN(US,CA)
J115	22198380	JACK, DIN, 4P MONIS-OUT(US,CA)
J116	22198380	JACK, DIN, 4P VCR2S-OUT(US,CA)
J122	22169392	SOCKET, 21P MONIT(EU,UK,SWI)
J123	22169392	SOCKET, 21P VCR1(EU,UK,SWI)
J124	22169392	SOCKET, 21P VC2(EU,UK,SWI)
J125	22162429	TERMINAL, 8P, SPEAKER
J127	22198512	JACK, 3.5MM SYSTEM CONTROL
J601	22198521	JACK, US-4P DIGITAL-IN,OUT
⚠ J901	22169339	AC OUTLET, 3P (USA,CANADA)
L110	22291189	CHOKE COIL, 10UH
L111	22291189	CHOKE COIL, 10UH
L703	22216327	TRANSFORMER, PULSE
L801	22210152	CHOKE COIL, 4UH
L802	22210152	CHOKE COIL, 4UH
L803	22210152	CHOKE COIL, 4UH
L804	22210152	CHOKE COIL, 4UH
L808	22291189	CHOKE COIL, 10UH
N324	22104721	DISPLAY TUBE
S301	22196968	KEY SWITCH POWER
S302	22196968	KEY SWITCH VCR1
S303	22196968	KEY SWITCH VCR2
S304	22196968	KEY SWITCH VCR3/AUX
S305	22196968	KEY SWITCH VDP
S306	22196968	KEY SWITCH TV/DBS
S307	22196968	KEY SWITCH DIGITAL INPUT
S308	22196968	KEY SWITCH CD
S309	22196968	KEY SWITCH TUNER
S310	22196968	KEY SWITCH TAPEI
S311	22196968	KEY SWITCH TAPE2/DAT
S312	22196968	KEY SWITCH PHONO
S313	22196968	KEY SWITCH MUTING
S314	22196968	KEY SWITCH BTL
S317	22196968	KEY SWITCH DSP
S318	22196968	KEY SWITCH AUDIO SOURCE
S319	22196968	KEY SWITCH VIDIO SOURCE
S320	22196968	KEY SWITCH RECORD
S321	22196968	KEY SWITCH REC CANCEL
S322	22196968	KEY SWITCH REC MONITOR
S325	22196968	KEY SWITCH CONCERT HALL
S326	22196968	KEY SWITCH CATHEDRAL
S327	22196968	KEY SWITCH NIGHT CLUB
S328	22196968	KEY SWITCH ROCK CONCERT
S329	22196968	KEY SWITCH STADIUM
S330	22196968	KEY SWITCH SPACE FANTASY
S331	22196968	KEY SWITCH THEATER
S332	22196968	KEY SWITCH DOLBY SURROUND
S704	22196929	KEY SWITCH SYSTEM RESET
S805	22148426	RELAY SPEAKER PROTECTO
S806	22148426	RELAY SPEAKER PROTECTO

Location No.	Part No.	Description
S807	22148428	RELAY DIGITAL/ANALOG
S809	22148431	RELAY SPEAKER PROTECTO
⚠ S904	22148427	RELAY POWER(USA,CANAD)
⚠ S904	22148432	RELAY POWER(EURO, SWISS)
⚠ S904	22148433	RELAY POWER(UK)
⚠ S908	22148435	CURRENT SWITCH
⚠ S909	22148435	CURRENT SWITCH
⚠ T901	22225669	POWER TRANSFORMER MAIN(USA,CANADA)
⚠ T901	22225670	POWER TRANSFORMER MAIN(EURO, SWISS)
⚠ T901	22225671	POWER TRANSFORMER MAIN(UK)
⚠ T902	22225672	POWER TRANSFORMER SUB(USA,CANADA)
⚠ T902	22225673	POWER TRANSFORMER SUB(EUROP, SWISS)
⚠ T902	22225674	POWER TRANSFORMER SUB(UK)
Z323	22153550	OSCILLATOR, CERAMIC, 6MHZ
Z333	22153444	OSCILLATOR, CERAMIC, 2MHZ
Z601	22137782	FILTER, LOW-PASS
Z602	22137782	FILTER, LOW-PASS
Z603	22137027	FILTER, LC
Z604	22137027	FILTER, LC
Z605	22153569	FILTER, F1381K
Z606	22135097	FILTER, EMI
Z701	22153550	OSCILLATOR, CERAMIC, 6MHZ
Z702	22153568	OSCILLATOR, CRY-STAL,18.867MHZ

CAPACITORS

Location No.	Part No.	Description
C101	20418479	EL, 4.7MFD, 50V
C102	20418479	EL, 4.7MFD, 50V
C121	20343471	CD, 470PF, 50V, K
C122	20343471	CD, 470PF, 50V, K
C141	20418100	EL, 10MFD, 50V
C142	20418100	EL, 10MFD, 50V
C167	20418100	EL, 10MFD, 50V
C168	20418100	EL, 10MFD, 50V
C169	20418100	EL, 10MFD, 50V
C170	20418100	EL, 10MFD, 50V
C173	20418100	EL, 10MFD, 50V
C174	20418100	EL, 10MFD, 50V
C175	20418100	EL, 10MFD, 50V
C176	20418100	EL, 10MFD, 50V
C177	20415471	EL, 470MFD, 16V
C178	20415471	EL, 470MFD, 16V
C185	20311101	CD, 100PF, 50V, J
C186	20311101	CD, 100PF, 50V, J
C187	20418100	EL, 10MFD, 50V
C188	20418100	EL, 10MFD, 50V
C189	20311101	CD, 100PF, 50V, J
C190	20311101	CD, 100PF, 50V, J
C191	20416470	EL, 47MFD, 25V
C192	20416470	EL, 47MFD, 25V
C193	20371123	MY, 0.012MFD, 50V, J
C194	20371123	MY, 0.012MFD, 50V, J
C195	20371332	MY, 3300PF, 50V, J
C196	20371332	MY, 3300PF, 50V, J
C197	20418229	EL, 2.2MFD, 50V
C198	20418229	EL, 2.2MFD, 50V
C199	20415101	EL, 100MFD, 16V
C200	20415101	EL, 100MFD, 16V
C201	20415101	EL, 100MFD, 16V
C202	20415101	EL, 100MFD, 16V
C203	20415101	EL, 100MFD, 16V
C204	20415101	EL, 100MFD, 16V
C205	20415101	EL, 100MFD, 16V
C206	20341103	CD, 0.01MFD, 50V, Z (USA,CANADA)
C207	20415101	EL, 100MFD, 16V (USA,CANADA)
C208	20341103	CD, 0.01MFD, 50V, Z (USA,CANADA)
C209	20415101	EL, 100MFD, 16V (USA,CANADA)
C210	20415101	EL, 100MFD, 16V
C211	20415101	EL, 100MFD, 16V
C212	20415101	EL, 100MFD, 16V
C213	20341103	CD, 0.01MFD, 50V, Z (USA,CANADA)
C214	20415101	EL, 100MFD, 16V (USA,CANADA)
C215	20341103	CD, 0.01MFD, 50V, Z (USA,CANADA)
C216	20415101	EL, 100MFD, 16V (USA,CANADA)
C224	20415471	EL, 470MFD, 16V
C225	20415471	EL, 470MFD, 16V
C226	20415471	EL, 470MFD, 16V
C227	20341103	CD, 0.01MFD, 50V, Z (USA,CANADA)
C228	20415471	EL, 470MFD, 16V (USA,CANADA)
C229	20341103	CD, 0.01MFD, 50V, Z (USA,CANADA)
C230	20415471	EL, 470MFD, 16V (USA,CANADA)
C231	20416470	EL, 47MFD, 25V
C236	20341103	CD, 0.01MFD, 50V, Z
C241	20418109	EL, 1MFD, 50V.
C242	20311330	CD, 33PF, 50V, J

Location No.	Part No.	Description
C301	20341473	CD, 0.047MFD, 50V, Z
C302	20341473	CD, 0.047MFD, 50V, Z
C303	20418338	EL, 0.33MFD, 50V
C304	20418338	EL, 0.33MFD, 50V
C305	20341473	CD, 0.047MFD, 50V, Z
C306	20341473	CD, 0.047MFD, 50V, Z
C307	20341473	CD, 0.047MFD, 50V, Z
C308	20341473	CD, 0.047MFD, 50V, Z
C309	20341473	CD, 0.047MFD, 50V, Z
C310	22440780	EL, 0.047MFD, 5V
C313	20343331	CD, 330PF, 50V, K
C314	20343331	CD, 330PF, 50V, K
C315	20341473	CD, 0.047MFD, 50V, Z
C316	20341473	CD, 0.047MFD, 50V, Z
C318	20414101	EL, 100MFD, 10V
C319	20414101	EL, 100MFD, 10V
C461	20418109	EL, 1MFD, 50V
C462	20418109	EL, 1MFD, 50V
C465	20381561	PP, 560PF, 100V, J
C466	20381561	PP, 560PF, 100V, J
C467	20418229	EL, 2.2MFD, 50V
C468	20418229	EL, 2.2MFD, 50V
C469	20418229	EL, 2.2MFD, 50V
C470	20418229	EL, 2.2MFD, 50V
C471	20418109	EL, 1MFD, 50V
C472	20418109	EL, 1MFD, 50V
C473	20418109	EL, 1MFD, 50V
C474	20418109	EL, 1MFD, 50V
C475	20418100	EL, 10MFD, 50V
C476	20418100	EL, 10MFD, 50V
C477	20418100	EL, 10MFD, 50V
C478	20418100	EL, 10MFD, 50V
C479	20371473	MY, 0.047MFD, 50V, J
C480	20371473	MY, 0.047MFD, 50V, J
C481	20371473	MY, 0.047MFD, 50V, J
C482	20371473	MY, 0.047MFD, 50V, J
C483	20311101	CD, 100PF, 50V, J
C484	20311101	CD, 100PF, 50V, J
C501	20343471	CD, 470PF, 50V, K
C502	20343471	CD, 470PF, 50V, K
C503	20343471	CD, 470PF, 50V, K
C504	20343471	CD, 470PF, 50V, K
C505	20341223	CD, 0.022MFD, 50V, Z
C506	20341223	CD, 0.022MFD, 50V, Z
C601	20450003	EL, 10MFD, 16V, NP
C602	20450003	EL, 10MFD, 16V, NP
C603	20381122	PP, 1200PF, 100V, J
C604	20381122	PP, 1200PF, 100V, J
C605	20418100	EL, 10MFD, 50V
C606	22480011	EL, 10MFD, 16V
C607	22480011	EL, 10MFD, 16V
C608	20319472	BL, 4700PF, 25V, M
C609	20311209	CD, 2PF, 50V, D
C610	20311209	CD, 2PF, 50V, D
C611	20418228	EL, 0.22MFD, 50V
C612	20319104	BL, 0.1MFD, 25V, M
C613	20319104	BL, 0.1MFD, 25V, M
C614	20414470	EL, 47MFD, 10V
C615	20371103	MY, 0.01MFD, 50V, J
C616	20371103	MY, 0.01MFD, 50V, J
C617	20450003	EL, 10MFD, 16V, NP
C618	20450003	EL, 10MFD, 16V, NP
C619	20381102	PP, 1000PF, 100V, J
C620	20381102	PP, 1000PF, 100V, J
C621	20341103	CD, 0.01MFD, 50V, Z
C622	20414101	EL, 100MFD, 10V
C623	20414101	EL, 100MFD, 10V
C624	20341103	CD, 0.01MFD, 50V, Z
C625	20341103	CD, 0.01MFD, 50V, Z
C626	20415100	EL, 10MFD, 16V
C627	20415100	EL, 10MFD, 16V
C629	20312470	CD, 47PF, 50V, J(CH)
C630	20312470	CD, 47PF, 50V, J(CH)
C631	20450003	EL, 10MFD, 16V, NP
C632	20450003	EL, 10MFD, 16V, NP
C633	20371272	MY, 2700PF, 50V, J
C634	20371272	MY, 2700PF, 50V, J
C635	20371123	MY, 0.012MFD, 50V, J
C636	20371222	MY, 2200PF, 50V, J
C637	20415100	EL, 10MFD, 16V
C638	20418338	EL, 0.33MFD, 50V
C639	20319104	BL, 0.1MFD, 25V, M
C640	20415100	EL, 10MFD, 16V
C641	20371473	MY, 0.047MFD, 50V, J
C642	20371472	MY, 4700PF, 50V, J
C643	20371273	MY, 0.027MFD, 50V, J
C644	20415471	EL, 470MFD, 16V
C645	20415221	EL, 220MFD, 16V
C646	20311102	CD, 1000PF, 50V, J
C647	20311102	CD, 1000PF, 50V, J
C648	20418109	EL, 1MFD, 50V
C649	20418109	EL, 1MFD, 50V
C650	20371562	MY, 5600PF, 50V, J
C651	20341473	CD, 0.047MFD, 50V, Z
C652	22480011	EL, 10MFD, 16V
C653	20341473	CD, 0.047MFD, 50V, Z
C655	20341473	CD, 0.047MFD, 50V, Z
C656	20341473	CD, 0.047MFD, 50V, Z
C656	22480011	EL, 10MFD, 16V
C657	22480011	EL, 10MFD, 16V
C658	20311101	CD, 100PF, 50V, J
C659	20319104	BL, 0.1MFD, 25V, M
C659	20341103	CD, 0.01MFD, 50V, Z
C660	20341103	CD, 0.01MFD, 50V, Z
C661	20341103	CD, 0.01MFD, 50V, Z
C662	20341103	CD, 0.01MFD, 50V, Z
C663	20341103	CD, 0.01MFD, 50V, Z
C701	20341103	CD, 0.01MFD, 50V, Z
C702	20341103	CD, 0.01MFD, 50V, Z
C703	20341103	CD, 0.01MFD, 50V, Z

Location No.	Part No.	Description
C704	20414330	EL, 33MFD, 10V
C705	20414330	EL, 33MFD, 10V
C706	20414330	EL, 33MFD, 10V
C707	20341103	CD, 0.01MFD, 50V, Z
C708	20371123	MY, 0.012MFD, 50V, J
C709	20311100	CD, 10PF, 50V, D
C710	20311100	CD, 10PF, 50V, D
C711	20418478	EL, 0.47MFD, 50V
C712	20341103	CD, 0.01MFD, 50V, Z
C713	20341103	CD, 0.01MFD, 50V, Z
C714	20311101	CD, 100PF, 50V, J
C715	20418109	EL, 1MFD, 50V
C716	20319473	BL, 0.047MFD, 25V, M
C717	20418100	EL, 10MFD, 50V
C718	20418100	EL, 10MFD, 50V
C720	20341103	CD, 0.01MFD, 50V, Z
C721	20414101	EL, 100MFD, 10V
C722	20311330	CD, 33PF, 50V, J
C725	20341473	CD, 0.047MFD, 50V, Z
C726	20341473	CD, 0.047MFD, 50V, Z
C727	20341473	CD, 0.047MFD, 50V, Z
C729	20341103	CD, 0.01MFD, 50V, Z
C731	20341473	CD, 0.047MFD, 50V, Z
C732	20341473	CD, 0.047MFD, 50V, Z
C805	20416470	EL, 47MFD, 25V
C806	20416470	EL, 47MFD, 25V
C807	20418109	EL, 1MFD, 50V
C808	20418109	EL, 1MFD, 50V
C809	20418109	EL, 1MFD, 50V
C810	20418109	EL, 1MFD, 50V
C811	20418100	EL, 10MFD, 50V
C812	20418100	EL, 10MFD, 50V
C813	20418229	EL, 2.2MFD, 50V
C814	20418229	EL, 2.2MFD, 50V
C815	20418229	EL, 2.2MFD, 50V
C816	20418229	EL, 2.2MFD, 50V
C817	20381471	PP, 470PF, 100V, J
C818	20381471	PP, 470PF, 100V, J
C819	20381471	PP, 470PF, 100V, J
C820	20381471	PP, 470PF, 100V, J
C825	20418101	EL, 100MFD, 50V
C826	20418101	EL, 100MFD, 50V
C827	20418101	EL, 100MFD, 50V
C828	20418101	EL, 100MFD, 50V
C829	20418109	EL, 1MFD, 50V
C830	20418109	EL, 1MFD, 50V
C831	20418109	EL, 1MFD, 50V
C832	20418109	EL, 1MFD, 50V
C837	20418470	EL, 47MFD, 50V
C838	20418470	EL, 47MFD, 50V
C839	20418470	EL, 47MFD, 50V
C840	20418470	EL, 47MFD, 50V
C841	20418101	EL, 100MFD, 50V
C842	20418101	EL, 100MFD, 50V
C843	20418100	EL, 10MFD, 50V
C844	20418100	EL, 10MFD, 50V
C845	20418100	EL, 10MFD, 50V
C846	20418100	EL, 10MFD, 50V
C847	20371104	MY, 0.1MFD, 50V, J
C848	20371104	MY, 0.1MFD, 50V, J
C849	20418479	EL, 4.7MFD, 50V
C858	20418228	EL, 0.22MFD, 50V
C859	20418479	EL, 4.7MFD, 50V
C860	20418109	EL, 1MFD, 50V
C861	20341473	CD, 0.047MFD, 50V, Z
C869	20418479	EL, 4.7MFD, 50V
C870	20418479	EL, 4.7MFD, 50V
C871	20343221	CD, 220PF, 50V, K
C872	20343221	CD, 220PF, 50V, K
C873	20343221	CD, 220PF, 50V, K
C874	20343221	CD, 220PF, 50V, K
C875	20343331	CD, 330PF, 50V, K
C876	20343331	CD, 330PF, 50V, K
C877	20343221	CD, 220PF, 50V, K
C878	20343221	CD, 220PF, 50V, K
C879	20343221	CD, 220PF, 50V, K
C880	20343221	CD, 220PF, 50V, K
C881	20343221	CD, 220PF, 50V, K
C882	20343221	CD, 220PF, 50V, K
C883	20343221	CD, 220PF, 50V, K
C884	20343221	CD, 220PF, 50V, K
C891	20371562	MY, 5600PF, 50V, J
C892	20371562	MY, 5600PF, 50V, J
C893	20341473	CD, 0.047MFD, 50V, Z
C894	20341473	CD, 0.047MFD, 50V, Z
C895	20418100	EL, 10MFD, 50V
C896	20418100	EL, 10MFD, 50V
C897	20343221	CD, 220PF, 50V, K
C898	20343221	CD, 220PF, 50V, K
C901	20400034	EL, 22000MFD, 63V
C902	20400034	EL, 22000MFD, 63V
C903	20410051	EL, 4700MFD, 25V
C904	20410051	EL, 4700MFD, 25V
⚠C905	22300050	CD, 4700PF, 400V, M (UK)
⚠C905	22340232	CD, 4700PF, 400V, M (EUROPE,SWISS)
⚠C905	22340236	CD, 0.01MFD, 125V, M (USA,CANADA)
C906	20416471	EL, 470MFD, 25V
C907	20341473	CD, 0.047MFD, 50V, Z
C908	20416470	EL, 47MFD, 25V
C909	20416470	EL, 47MFD, 25V
C910	20341473	CD, 0.047MFD, 50V, Z
C911	20416470	EL, 47MFD, 25V
C912	20416470	EL, 47MFD, 25V
C913	20416470	EL, 47MFD, 25V
C914	20416470	EL, 47MFD, 25V
C915	20418101	EL, 100MFD, 50V
C916	20418101	EL, 100MFD, 50V

Location No.	Part No.	Description
C917	20371393	MY, 0.039MFD, 50V, J
C918	20371393	MY, 0.039MFD, 50V, J
C919	20371393	MY, 0.039MFD, 50V, J
C920	20371393	MY, 0.039MFD, 50V, J
C921	20371104	MY, 0.1MFD, 50V, J
C922	20371104	MY, 0.1MFD, 50V, J
C923	20371104	MY, 0.1MFD, 50V, J
C924	20371104	MY, 0.1MFD, 50V, J
C925	20343221	CD, 220PF, 50V, K
C926	20343221	CD, 220PF, 50V, K
C927	20416470	EL, 47MFD, 25V
C929	20416470	EL, 47MFD, 25V
C931	20416470	EL, 47MFD, 25V
C933	20416470	EL, 47MFD, 25V
C937	20341473	CD, 0.047MFD, 50V, Z
C938	20341473	CD, 0.047MFD, 50V, Z
C939	20341473	CD, 0.047MFD, 50V, Z
C940	20341473	CD, 0.047MFD, 50V, Z
C941	20341473	CD, 0.047MFD, 50V, Z
C941	20418100	EL, 10MFD, 50V
C942	20418100	EL, 10MFD, 50V
C943	20414101	EL, 100MFD, 10V
C944	20418220	EL, 22MFD, 50V

RESISTORS

Location No.	Part No.	Description
R101	20512683	CF, 68K OHM, 1/6W, J
R102	20512683	CF, 68K OHM, 1/6W, J
R121	20512274	CF, 270K OHM, 1/6W, J
R122	20512274	CF, 270K OHM, 1/6W, J
R141	20512561	CF, 560 OHM, 1/6W, J
R142	20512561	CF, 560 OHM, 1/6W, J
R161	20512472	CF, 4.7K OHM, 1/6W, J
R162	20512472	CF, 4.7K OHM, 1/6W, J
R181	20512103	CF, 10K OHM, 1/6W, J
R182	20512103	CF, 10K OHM, 1/6W, J
R201	20512103	CF, 10K OHM, 1/6W, J
R202	20512103	CF, 10K OHM, 1/6W, J
R203	20512103	CF, 10K OHM, 1/6W, J
R204	20512103	CF, 10K OHM, 1/6W, J
R215	20512103	CF, 10K OHM, 1/6W, J
R216	20512103	CF, 10K OHM, 1/6W, J
R217	20512103	CF, 10K OHM, 1/6W, J
R218	20512103	CF, 10K OHM, 1/6W, J
R221	20512103	CF, 10K OHM, 1/6W, J
R222	20512103	CF, 10K OHM, 1/6W, J
R223	20512103	CF, 10K OHM, 1/6W, J
R224	20512103	CF, 10K OHM, 1/6W, J
R225	20512471	CF, 470 OHM, 1/6W, J
R226	20512471	CF, 470 OHM, 1/6W, J
R227	20512471	CF, 470 OHM, 1/6W, J
R228	20512471	CF, 470 OHM, 1/6W, J
R231	20512471	CF, 470 OHM, 1/6W, J
R232	20512471	CF, 470 OHM, 1/6W, J
R233	20512471	CF, 470 OHM, 1/6W, J
R234	20512471	CF, 470 OHM, 1/6W, J
R239	20512470	CF, 47 OHM, 1/6W, J
R240	20512470	CF, 47 OHM, 1/6W, J
R241	20512470	CF, 47 OHM, 1/6W, J
R242	20512470	CF, 47 OHM, 1/6W, J
R243	20512470	CF, 47 OHM, 1/6W, J
R244	22570788	MF, 75 OHM, 1/6W, F (USA,CANADA)
R245	22570788	MF, 75 OHM, 1/6W, F (USA,CANADA)
R246	20512470	CF, 47 OHM, 1/6W, J
R247	20512470	CF, 47 OHM, 1/6W, J
R248	20512472	CF, 4.7K OHM, 1/6W, J
R249	20512472	CF, 4.7K OHM, 1/6W, J
R250	20512472	CF, 4.7K OHM, 1/6W, J
R251	20512472	CF, 4.7K OHM, 1/6W, J (USA,CANADA)
R252	20512472	CF, 4.7K OHM, 1/6W, J (USA,CANADA)
R253	20512472	CF, 4.7K OHM, 1/6W, J (USA,CANADA)
R254	20512472	CF, 4.7K OHM, 1/6W, J (USA,CANADA)
R255	20512272	CF, 2.7K OHM, 1/6W, J
R256	20512272	CF, 2.7K OHM, 1/6W, J
R257	20512272	CF, 2.7K OHM, 1/6W, J
R258	20512272	CF, 2.7K OHM, 1/6W, J (USA,CANADA)
R259	20512272	CF, 2.7K OHM, 1/6W, J (USA,CANADA)
R260	20512272	CF, 2.7K OHM, 1/6W, J (USA,CANADA)
R261	20512272	CF, 2.7K OHM, 1/6W, J (USA,CANADA)
R262	20512122	CF, 1.2K OHM, 1/6W, J
R263	20512122	CF, 1.2K OHM, 1/6W, J
R264	20512122	CF, 1.2K OHM, 1/6W, J
R265	20512122	CF, 1.2K OHM, 1/6W, J (USA,CANADA)
R266	20512122	CF, 1.2K OHM, 1/6W, J (USA,CANADA)
R267	20512122	CF, 1.2K OHM, 1/6W, J (USA,CANADA)
R268	20512122	CF, 1.2K OHM, 1/6W, J (USA,CANADA)
R269	20512561	CF, 560 OHM, 1/6W, J
R270	20512561	CF, 560 OHM, 1/6W, J
R271	20512561	CF, 560 OHM, 1/6W, J
R272	20512561	CF, 560 OHM, 1/6W, J (USA,CANADA)
R273	20512561	CF, 560 OHM, 1/6W, J (USA,CANADA)
R274	20512561	CF, 560 OHM, 1/6W, J (USA,CANADA)

Location No.	Part No.	Description
R275	20512561	CF, 560 OHM, 1/6W, J (USA,CANADA)
R276	20512272	CF, 2.7K OHM, 1/6W, J
R277	20512272	CF, 2.7K OHM, 1/6W, J
R278	20512272	CF, 2.7K OHM, 1/6W, J
R279	20512272	CF, 2.7K OHM, 1/6W, J (USA,CANADA)
R280	20512272	CF, 2.7K OHM, 1/6W, J (USA,CANADA)
R281	20512272	CF, 2.7K OHM, 1/6W, J (USA,CANADA)
R282	20512272	CF, 2.7K OHM, 1/6W, J (USA,CANADA)
R283	20512272	CF, 2.7K OHM, 1/6W, J
R284	20512272	CF, 2.7K OHM, 1/6W, J
R285	20512272	CF, 2.7K OHM, 1/6W, J
R286	20512272	CF, 2.7K OHM, 1/6W, J (USA,CANADA)
R287	20512272	CF, 2.7K OHM, 1/6W, J (USA,CANADA)
R288	20512272	CF, 2.7K OHM, 1/6W, J (USA,CANADA)
R289	20512272	CF, 2.7K OHM, 1/6W, J (USA,CANADA)
R290	22570788	MF, 75 OHM, 1/6W, F
R291	22570788	MF, 75 OHM, 1/6W, F
R292	22570788	MF, 75 OHM, 1/6W, F
R293	22570788	MF, 75 OHM, 1/6W, F (USA,CANADA)
R294	22570788	MF, 75 OHM, 1/6W, F (USA,CANADA)
R295	22570788	MF, 75 OHM, 1/6W, F (USA,CANADA)
R296	22570788	MF, 75 OHM, 1/6W, F (USA,CANADA)
R297	20512473	CF, 47K OHM, 1/6W, J
R298	20512473	CF, 47K OHM, 1/6W, J
R299	20512102	CF, 1K OHM, 1/6W, J
R300	20512102	CF, 1K OHM, 1/6W, J
R301	20512101	CF, 100 OHM, 1/6W, J
R302	20512101	CF, 100 OHM, 1/6W, J
R303	20512101	CF, 100 OHM, 1/6W, J
R304	20512101	CF, 100 OHM, 1/6W, J
R305	20512101	CF, 100 OHM, 1/6W, J
R306	20512101	CF, 100 OHM, 1/6W, J
R307	20512101	CF, 100 OHM, 1/6W, J
R308	20512101	CF, 100 OHM, 1/6W, J
R309	20512101	CF, 100 OHM, 1/6W, J
R310	20512101	CF, 100 OHM, 1/6W, J
R311	20512121	CF, 120 OHM, 1/6W, J
R312	20512121	CF, 120 OHM, 1/6W, J
R313	20512121	CF, 120 OHM, 1/6W, J
R314	20512121	CF, 120 OHM, 1/6W, J
R316	20512121	CF, 120 OHM, 1/6W, J
R317	20512331	CF, 330 OHM, 1/6W, J

Location No.	Part No.	Description
R318	20512121	CF, 120 OHM, 1/6W, J
R319	20512121	CF, 120 OHM, 1/6W, J
R320	20512121	CF, 120 OHM, 1/6W, J
R321	20512121	CF, 120 OHM, 1/6W, J
R322	20512121	CF, 120 OHM, 1/6W, J
R323	20512121	CF, 120 OHM, 1/6W, J
R324	20512331	CF, 330 OHM, 1/6W, J
R325	20512103	CF, 10K OHM, 1/6W, J
R326	20512103	CF, 10K OHM, 1/6W, J
R327	20512103	CF, 10K OHM, 1/6W, J
R335	20512331	CF, 330 OHM, 1/6W, J
R360	20512473	CF, 47K OHM, 1/6W, J
R361	20512473	CF, 47K OHM, 1/6W, J
R362	20512331	CF, 330 OHM, 1/6W, J
R363	22625233	VARIABLE, 50K OHM X4, B MASTER VOLUME
R364	22618200	VARIABLE, 50K OHM, B INPUT LEVEL
R365	22618201	VARIABLE, 200K OHM, MN BALANCE
R367	20512472	CF, 4.7K OHM, 1/6W, J
R370	20512473	CF, 47K OHM, 1/6W, J
R373	20512473	CF, 47K OHM, 1/6W, J
R374	20512331	CF, 330 OHM, 1/6W, J
R375	20512473	CF, 47K OHM, 1/6W, J
R376	20512473	CF, 47K OHM, 1/6W, J
R377	20512473	CF, 47K OHM, 1/6W, J
R378	20512471	CF, 470 OHM, 1/6W, J
R379	20512683	CF, 68K OHM, 1/6W, J
R380	20512333	CF, 33K OHM, 1/6W, J
R381	20512473	CF, 47K OHM, 1/6W, J
R382	20512103	CF, 10K OHM, 1/6W, J
R382	20512471	CF, 470 OHM, 1/6W, J
R383	20512104	CF, 100K OHM, 1/6W, J
R384	22612204	VARIABLE, 10K OHM, B BASS
R385	22612204	VARIABLE, 10K OHM, B TREBLE
R386	20512103	CF, 10K OHM, 1/6W, J
R387	20512103	CF, 10K OHM, 1/6W, J
R401	20512103	CF, 10K OHM, 1/6W, J
R402	20512103	CF, 10K OHM, 1/6W, J
R403	20512103	CF, 10K OHM, 1/6W, J
R404	20512103	CF, 10K OHM, 1/6W, J (USA,CANADA)
R405	20512103	CF, 10K OHM, 1/6W, J (USA,CANADA)
R406	20512103	CF, 10K OHM, 1/6W, J (USA,CANADA)
R407	20512103	CF, 10K OHM, 1/6W, J (USA,CANADA)
R408	20512103	CF, 10K OHM, 1/6W, J
R409	20512103	CF, 10K OHM, 1/6W, J
R410	20512103	CF, 10K OHM, 1/6W, J
R411	20512103	CF, 10K OHM, 1/6W, J

Location No.	Part No.	Description
R412	20512103	CF, 10K OHM, 1/6W, J
R413	20512103	CF, 10K OHM, 1/6W, J (USA,CANADA)
R414	20512103	CF, 10K OHM, 1/6W, J (USA,CANADA)
R415	20512103	CF, 10K OHM, 1/6W, J (USA,CANADA)
R416	20512103	CF, 10K OHM, 1/6W, J (USA,CANADA)
R417	20512561	CF, 560 OHM, 1/6W, J
R418	20512561	CF, 560 OHM, 1/6W, J
R419	20512561	CF, 560 OHM, 1/6W, J
R420	20512561	CF, 560 OHM, 1/6W, J (USA,CANADA)
R421	20512561	CF, 560 OHM, 1/6W, J (USA,CANADA)
R422	20512561	CF, 560 OHM, 1/6W, J (USA,CANADA)
R423	20512561	CF, 560 OHM, 1/6W, J (USA,CANADA)
⚠ R424	22500278	FUSIBLE, 10 OHM, 1/4W, J
⚠ R425	22500278	FUSIBLE, 10 OHM, 1/4W, J
R429	20512102	CF, 1K OHM, 1/6W, J
R430	20512102	CF, 1K OHM, 1/6W, J
R431	20512105	CF, 1M OHM, 1/6W, J
R432	20512105	CF, 1M OHM, 1/6W, J
R452	20512225	CF, 2.2M OHM, 1/6W, J
R453	20512221	CF, 220 OHM, 1/6W, J
R454	20512221	CF, 220 OHM, 1/6W, J
R455	20512103	CF, 10K OHM, 1/6W, J
R456	20512333	CF, 33K OHM, 1/6W, J
R457	20512333	CF, 33K OHM, 1/6W, J
R458	20512333	CF, 33K OHM, 1/6W, J
R459	20512333	CF, 33K OHM, 1/6W, J
R460	20512333	CF, 33K OHM, 1/6W, J
R461	20512104	CF, 100K OHM, 1/6W, J
R462	20512104	CF, 100K OHM, 1/6W, J
R463	20512333	CF, 33K OHM, 1/6W, J
R464	20512333	CF, 33K OHM, 1/6W, J
R465	20512152	CF, 1.5K OHM, 1/6W, J
R466	20512152	CF, 1.5K OHM, 1/6W, J
R467	20512152	CF, 1.5K OHM, 1/6W, J
R468	20512152	CF, 1.5K OHM, 1/6W, J
R469	20512152	CF, 1.5K OHM, 1/6W, J
R470	20512152	CF, 1.5K OHM, 1/6W, J
R471	20512152	CF, 1.5K OHM, 1/6W, J
R472	20512152	CF, 1.5K OHM, 1/6W, J
R473	20512391	CF, 390 OHM, 1/6W, J
R474	20512391	CF, 390 OHM, 1/6W, J
R475	20512391	CF, 390 OHM, 1/6W, J
R476	20512391	CF, 390 OHM, 1/6W, J
R477	20512391	CF, 390 OHM, 1/6W, J
R478	20512391	CF, 390 OHM, 1/6W, J
R479	20512391	CF, 390 OHM, 1/6W, J
R480	20512391	CF, 390 OHM, 1/6W, J

Location No.	Part No.	Description
R481	20512101	CF, 100 OHM, 1/6W, J
R481	20512103	CF, 10K OHM, 1/6W, J
R482	20512101	CF, 100 OHM, 1/6W, J
R482	20512103	CF, 10K OHM, 1/6W, J
R483	20512102	CF, 1K OHM, 1/6W, J
R484	20512102	CF, 1K OHM, 1/6W, J
R485	20512473	CF, 47K OHM, 1/6W, J
R486	20512473	CF, 47K OHM, 1/6W, J
R487	20512274	CF, 270K OHM, 1/6W, J
R488	20512274	CF, 270K OHM, 1/6W, J
R489	20512223	CF, 22K OHM, 1/6W, J
R490	20512223	CF, 22K OHM, 1/6W, J
R491	20512391	CF, 390 OHM, 1/6W, J
R492	20512391	CF, 390 OHM, 1/6W, J
R493	20512563	CF, 56K OHM, 1/6W, J
R494	20512563	CF, 56K OHM, 1/6W, J
R495	20512333	CF, 33K OHM, 1/6W, J (USA,CANADA)
R496	20512333	CF, 33K OHM, 1/6W, J (USA,CANADA)
R497	20512333	CF, 33K OHM, 1/6W, J (USA,CANADA)
R498	20512333	CF, 33K OHM, 1/6W, J (USA,CANADA)
R601	20512102	CF, 1K OHM, 1/6W, J
R602	20512102	CF, 1K OHM, 1/6W, J
R603	22618004	VARIABLE, 100K OHM, B INPUT BALANCE
R605	20512104	CF, 100K OHM, 1/6W, J
R606	20512104	CF, 100K OHM, 1/6W, J
R607	20512104	CF, 100K OHM, 1/6W, J
R608	20512104	CF, 100K OHM, 1/6W, J
R609	20512562	CF, 5.6K OHM, 1/6W, J
R610	20512562	CF, 5.6K OHM, 1/6W, J
R611	20512822	CF, 8.2K OHM, 1/6W, J
R612	20512822	CF, 8.2K OHM, 1/6W, J
R613	20512682	CF, 6.8K OHM, 1/6W, J
R614	20512682	CF, 6.8K OHM, 1/6W, J
R615	20512103	CF, 10K OHM, 1/6W, J
R616	20512103	CF, 10K OHM, 1/6W, J
R617	20512103	CF, 10K OHM, 1/6W, J
R618	20512103	CF, 10K OHM, 1/6W, J
R619	20512103	CF, 10K OHM, 1/6W, J
R620	20512103	CF, 10K OHM, 1/6W, J
R621	20512103	CF, 10K OHM, 1/6W, J
R622	20512103	CF, 10K OHM, 1/6W, J
R623	22659064	VARIABLE, SEMI FIXED, 4.7K-B
R624	22659064	VARIABLE, SEMI FIXED, 4.7K-B
R625	22659064	VARIABLE, SEMI FIXED, 4.7K-B
R627	20512103	CF, 10K OHM, 1/6W, J
R628	20512151	CF, 150 OHM, 1/6W, J
R629	20512332	CF, 3.3K OHM, 1/6W, J
R630	20512331	CF, 330 OHM, 1/6W, J
R631	20512103	CF, 10K OHM, 1/6W, J
R632	20512103	CF, 10K OHM, 1/6W, J

Location No.	Part No.	Description
R633	20512103	CF, 10K OHM, 1/6W, J
R634	20512103	CF, 10K OHM, 1/6W, J
R635	20512103	CF, 10K OHM, 1/6W, J
R636	20512104	CF, 100K OHM, 1/6W, J
R637	20512474	CF, 470K OHM, 1/6W, J
R638	20512822	CF, 8.2K OHM, 1/6W, J
R639	20512474	CF, 470K OHM, 1/6W, J
R640	20512474	CF, 470K OHM, 1/6W, J
R641	20512105	CF, 1M OHM, 1/6W, J
R642	20512105	CF, 1M OHM, 1/6W, J
R643	22658947	VARIABLE, SEMI FIXED, 100K-B
R644	22658947	VARIABLE, SEMI FIXED, 100K-B
R645	20512224	CF, 220K OHM, 1/6W, J
R646	20512224	CF, 220K OHM, 1/6W, J
R647	20512332	CF, 3.3K OHM, 1/6W, J
R648	20512332	CF, 3.3K OHM, 1/6W, J
R649	20512152	CF, 1.5K OHM, 1/6W, J
R650	20512152	CF, 1.5K OHM, 1/6W, J
R651	20512106	CF, 10M OHM, 1/6W, J
R652	20512106	CF, 10M OHM, 1/6W, J
R653	20512104	CF, 100K OHM, 1/6W, J
R654	20512104	CF, 100K OHM, 1/6W, J
R655	20512102	CF, 1K OHM, 1/6W, J
R656	20512102	CF, 1K OHM, 1/6W, J
R657	20512102	CF, 1K OHM, 1/6W, J
R658	20512102	CF, 1K OHM, 1/6W, J
R659	20512220	CF, 22 OHM, 1/6W, J
R660	20512220	CF, 22 OHM, 1/6W, J
R661	20512332	CF, 3.3K OHM, 1/6W, J
R662	20512332	CF, 3.3K OHM, 1/6W, J
R663	20512332	CF, 3.3K OHM, 1/6W, J
R664	20512332	CF, 3.3K OHM, 1/6W, J
R665	20512272	CF, 2.7K OHM, 1/6W, J
R666	20512272	CF, 2.7K OHM, 1/6W, J
R667	20512153	CF, 15K OHM, 1/6W, J
R668	20512153	CF, 15K OHM, 1/6W, J
R669	20512332	CF, 3.3K OHM, 1/6W, J
R670	20512332	CF, 3.3K OHM, 1/6W, J
R671	20512106	CF, 10M OHM, 1/6W, J
R672	20512106	CF, 10M OHM, 1/6W, J
R673	20512103	CF, 10K OHM, 1/6W, J
R674	20512103	CF, 10K OHM, 1/6W, J
R675	20512223	CF, 22K OHM, 1/6W, J
R676	20512223	CF, 22K OHM, 1/6W, J
R677	20512102	CF, 1K OHM, 1/6W, J
R678	20512102	CF, 1K OHM, 1/6W, J
R679	20512102	CF, 1K OHM, 1/6W, J
R680	20512102	CF, 1K OHM, 1/6W, J
R681	20512473	CF, 47K OHM, 1/6W, J
R683	20512182	CF, 1.8K OHM, 1/6W, J
R685	20512682	CF, 6.8K OHM, 1/6W, J
R686	20512274	CF, 270K OHM, 1/6W, J
R687	20512154	CF, 150K OHM, 1/6W, J
R688	20512473	CF, 47K OHM, 1/6W, J
R689	20512332	CF, 3.3K OHM, 1/6W, J
R690	20512563	CF, 56K OHM, 1/6W, J
R691	20512223	CF, 22K OHM, 1/6W, J
R692	20512333	CF, 33K OHM, 1/6W, J
R693	20512223	CF, 22K OHM, 1/6W, J
R694	20512181	CF, 180 OHM, 1/6W, J
R695	20512182	CF, 1.8K OHM, 1/6W, J
R696	20512153	CF, 15K OHM, 1/6W, J
R697	20512473	CF, 47K OHM, 1/6W, J
R698	20512473	CF, 47K OHM, 1/6W, J
R699	20512474	CF, 470K OHM, 1/6W, J
R701	20512103	CF, 10K OHM, 1/6W, J
R702	20512104	CF, 100K OHM, 1/6W, J
R703	20512474	CF, 470K OHM, 1/6W, J
R704	20512224	CF, 220K OHM, 1/6W, J
R705	20512103	CF, 10K OHM, 1/6W, J
R706	20512103	CF, 10K OHM, 1/6W, J
R707	20512103	CF, 10K OHM, 1/6W, J
R708	20512103	CF, 10K OHM, 1/6W, J
R709	20512103	CF, 10K OHM, 1/6W, J
R710	20512392	CF, 3.9K OHM, 1/6W, J
R711	20512682	CF, 6.8K OHM, 1/6W, J
R712	20512682	CF, 6.8K OHM, 1/6W, J
R751	22570788	MF, 75 OHM, 1/6W, F
R752	22570788	MF, 75 OHM, 1/6W, F
R753	22570788	MF, 75 OHM, 1/6W, F
R754	22570788	MF, 75 OHM, 1/6W, F
R755	20512473	CF, 47K OHM, 1/6W, J
R756	20512473	CF, 47K OHM, 1/6W, J
R757	20512473	CF, 47K OHM, 1/6W, J
R758	20512222	CF, 2.2K OHM, 1/6W, J
R759	20512222	CF, 2.2K OHM, 1/6W, J
R760	20512222	CF, 2.2K OHM, 1/6W, J
R761	20512271	CF, 270 OHM, 1/6W, J
R763	20512273	CF, 27K OHM, 1/6W, J
R765	22659064	VARIABLE, SEMI FIXED, 4.7K-B
R766	20512563	CF, 56K OHM, 1/6W, J
R767	20512563	CF, 56K OHM, 1/6W, J
R813	20512223	CF, 22K OHM, 1/6W, J
R815	20512224	CF, 220K OHM, 1/6W, J
R816	20512224	CF, 220K OHM, 1/6W, J
R817	20512102	CF, 1K OHM, 1/6W, J
R818	20512102	CF, 1K OHM, 1/6W, J
R819	20512102	CF, 1K OHM, 1/6W, J
R820	20512102	CF, 1K OHM, 1/6W, J
R821	20512472	CF, 4.7K OHM, 1/6W, J
R822	20512472	CF, 4.7K OHM, 1/6W, J
R823	20512472	CF, 4.7K OHM, 1/6W, J
R824	20512472	CF, 4.7K OHM, 1/6W, J
R825	20512563	CF, 56K OHM, 1/6W, J
R826	20512563	CF, 56K OHM, 1/6W, J
R827	20512563	CF, 56K OHM, 1/6W, J
R828	20512563	CF, 56K OHM, 1/6W, J
R829	20512563	CF, 56K OHM, 1/6W, J
R830	20512563	CF, 56K OHM, 1/6W, J
R831	20512563	CF, 56K OHM, 1/6W, J

Location No.	Part No.	Description
R832	20512563	CF, 56K OHM, 1/6W, J
R833	20512104	CF, 100K OHM, 1/6W, J
R837	20512561	CF, 560 OHM, 1/6W, J
R838	20512561	CF, 560 OHM, 1/6W, J
R839	20512561	CF, 560 OHM, 1/6W, J
R840	20512561	CF, 560 OHM, 1/6W, J
R841	20516392	CF, 3.9K OHM, 1/2W, J
R842	20516392	CF, 3.9K OHM, 1/2W, J
R843	20516392	CF, 3.9K OHM, 1/2W, J
R844	20516392	CF, 3.9K OHM, 1/2W, J
R845	20516392	CF, 3.9K OHM, 1/2W, J
R846	20516392	CF, 3.9K OHM, 1/2W, J
R847	20516392	CF, 3.9K OHM, 1/2W, J
R848	20516392	CF, 3.9K OHM, 1/2W, J
⚠ R849	20532101	FUSIBLE, 100 OHM, 1/2W, J
⚠ R850	20532101	FUSIBLE, 100 OHM, 1/2W, J
⚠ R851	20532101	FUSIBLE, 100 OHM, 1/2W, J
⚠ R852	20532101	FUSIBLE, 100 OHM, 1/2W, J
R853	22500186	WIRE WOUND, 0.22 OHM, 5W, K
R854	22500186	WIRE WOUND, 0.22 OHM, 5W, K
R855	22500186	WIRE WOUND, 0.22 OHM, 5W, K
R856	22500186	WIRE WOUND, 0.22 OHM, 5W, K
R857	20512122	CF, 1.2K OHM, 1/6W, J
R858	20512122	CF, 1.2K OHM, 1/6W, J
R859	20512122	CF, 1.2K OHM, 1/6W, J
R860	20512122	CF, 1.2K OHM, 1/6W, J
R861	20512821	CF, 820 OHM, 1/6W, J
R862	20512821	CF, 820 OHM, 1/6W, J
R863	20512821	CF, 820 OHM, 1/6W, J
R864	20512821	CF, 820 OHM, 1/6W, J
R865	20512103	CF, 10K OHM, 1/6W, J
R866	20512103	CF, 10K OHM, 1/6W, J
R867	20512103	CF, 10K OHM, 1/6W, J
R868	20512103	CF, 10K OHM, 1/6W, J
R869	20516479	CF, 4.7 OHM, 1/2W, J
R870	20516479	CF, 4.7 OHM, 1/2W, J
R871	20516479	CF, 4.7 OHM, 1/2W, J
R872	20516479	CF, 4.7 OHM, 1/2W, J
R873	20516479	CF, 4.7 OHM, 1/2W, J
R874	20516479	CF, 4.7 OHM, 1/2W, J
R875	20516479	CF, 4.7 OHM, 1/2W, J
R876	20516479	CF, 4.7 OHM, 1/2W, J
R877	20512104	CF, 100K OHM, 1/6W, J
R878	20512104	CF, 100K OHM, 1/6W, J
R879	20512104	CF, 100K OHM, 1/6W, J
R880	20512104	CF, 100K OHM, 1/6W, J
R881	20512273	CF, 27K OHM, 1/6W, J
R885	20512102	CF, 1K OHM, 1/6W, J
R887	20512104	CF, 100K OHM, 1/6W, J
R888	20512104	CF, 100K OHM, 1/6W, J
R889	20512561	CF, 560 OHM, 1/6W, J
R890	20512561	CF, 560 OHM, 1/6W, J
R891	20512103	CF, 10K OHM, 1/6W, J
R892	20512103	CF, 10K OHM, 1/6W, J
R893	20512101	CF, 100 OHM, 1/6W, J
R894	20512101	CF, 100 OHM, 1/6W, J
R895	20512223	CF, 22K OHM, 1/6W, J
R896	20512472	CF, 4.7K OHM, 1/6W, J
R897	20512472	CF, 4.7K OHM, 1/6W, J
R898	20512472	CF, 4.7K OHM, 1/6W, J
R899	20512472	CF, 4.7K OHM, 1/6W, J
R901	20512102	CF, 1K OHM, 1/6W, J
R902	20513391	CF, 390 OHM, 1/4W, J
R903	20513222	CF, 2.2K OHM, 1/4W, J
⚠ R904	22500405	FUSIBLE, 2.2 OHM, 1/4W, K
⚠ R905	22500405	FUSIBLE, 2.2 OHM, 1/4W, K
⚠ R906	22500405	FUSIBLE, 2.2 OHM, 1/4W, K
R911	20512102	CF, 1K OHM, 1/6W, J
R912	20512102	CF, 1K OHM, 1/6W, J
R913	20512102	CF, 1K OHM, 1/6W, J
R914	20512102	CF, 1K OHM, 1/6W, J
R915	20512102	CF, 1K OHM, 1/6W, J
R916	20512102	CF, 1K OHM, 1/6W, J
R917	20512102	CF, 1K OHM, 1/6W, J
R918	20512102	CF, 1K OHM, 1/6W, J
R919	20516102	CF, 1K OHM, 1/2W, J
R920	20516102	CF, 1K OHM, 1/2W, J
R921	20516102	CF, 1K OHM, 1/2W, J
R922	20516102	CF, 1K OHM, 1/2W, J
R923	20512333	CF, 33K OHM, 1/6W, J
R924	20512103	CF, 10K OHM, 1/6W, J
R925	20512103	CF, 10K OHM, 1/6W, J
R926	20512104	CF, 100K OHM, 1/6W, J
R927	20512105	CF, 1M OHM, 1/6W, J
R928	20512333	CF, 33K OHM, 1/6W, J
R929	20512472	CF, 4.7K OHM, 1/6W, J
R930	20512102	CF, 1K OHM, 1/6W, J
R931	20512104	CF, 100K OHM, 1/6W, J
R932	20512333	CF, 33K OHM, 1/6W, J
R933	20512105	CF, 1M OHM, 1/6W, J
R934	20512105	CF, 1M OHM, 1/6W, J
R935	20512105	CF, 1M OHM, 1/6W, J
R936	20512105	CF, 1M OHM, 1/6W, J
R937	20512102	CF, 1K OHM, 1/6W, J
R938	20512102	CF, 1K OHM, 1/6W, J
R940	20512563	CF, 56K OHM, 1/6W, J
R941	20512223	CF, 22K OHM, 1/6W, J
R942	20512103	CF, 10K OHM, 1/6W, J
R943	20512333	CF, 33K OHM, 1/6W, J
R944	20512333	CF, 33K OHM, 1/6W, J
R945	20512103	CF, 10K OHM, 1/6W, J
R946	20512103	CF, 10K OHM, 1/6W, J
R949	20512221	CF, 220 OHM, 1/6W, J
⚠ R950	22500403	FUSIBLE, 0.47 OHM, 1/4W, K
R951	20513101	CF, 100 OHM, 1/4W, J
R952	20512333	CF, 33K OHM, 1/6W, J
R953	20512225	CF, 2.2M OHM, 1/6W, J
R954	20512103	CF, 10K OHM, 1/6W, J
R955	20512333	CF, 33K OHM, 1/6W, J
R956	20512104	CF, 100K OHM, 1/6W, J

Location No.	Part No.	Description
R957	20512333	CF, 33K OHM, 1/6W, J

ACCESSORIES

AC01	22908941	OWNER"S MANUAL (USA)
AC01	22908979	OWNER"S MANUAL (EUROPE,SWISS)
AC01	22909022	OWNER"S MANUAL (CANADA)
AC01	22909023	OWNER"S MANUAL (UK)
AC02	22120200	REMOTE CONTROL UNIT, 1000XBA (USA,CANADA)
AC02	22120201	REMOTE CONTROL UNIT, 1000XBE (EURO,UK,SWISS)
AC03	20836868	SHEET, REMOTE CONTROL (EUROPE,UK)